



Entered at the Post Office at Chicago, Ill., or transmission through the mails at second-class rates.

A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

PUBLISHED BY
Mitchell Bros. Company.
(INCORPORATED.)

Vol. II.

CHICAGO, ILLINOIS, APRIL 15, 1884.

No. 10.

SUBSCRIPTION PRICE,
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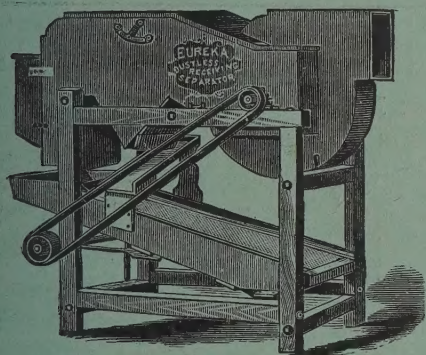
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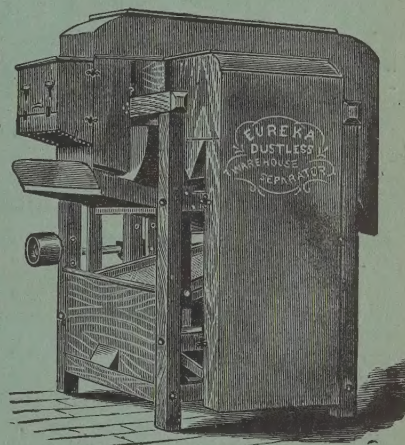
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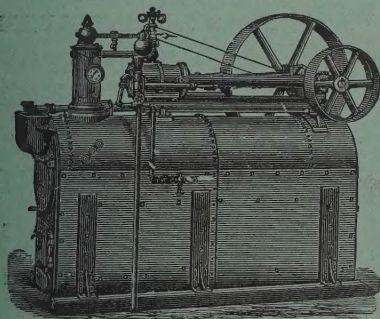
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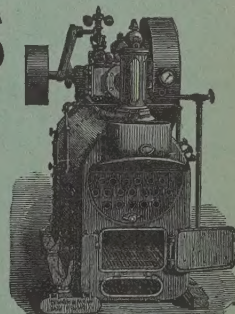
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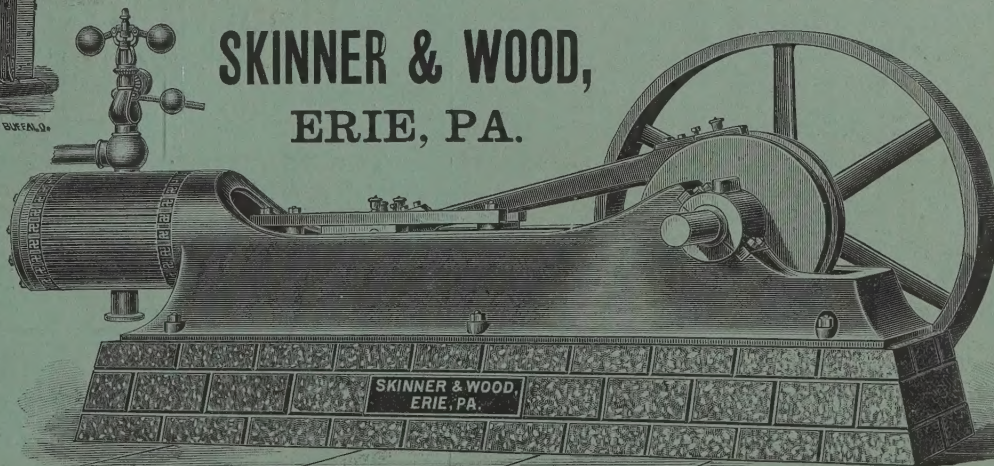
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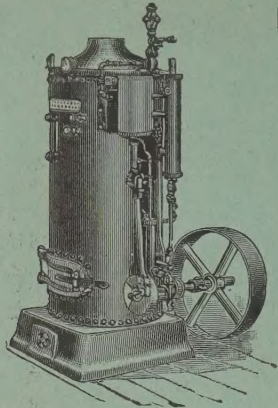
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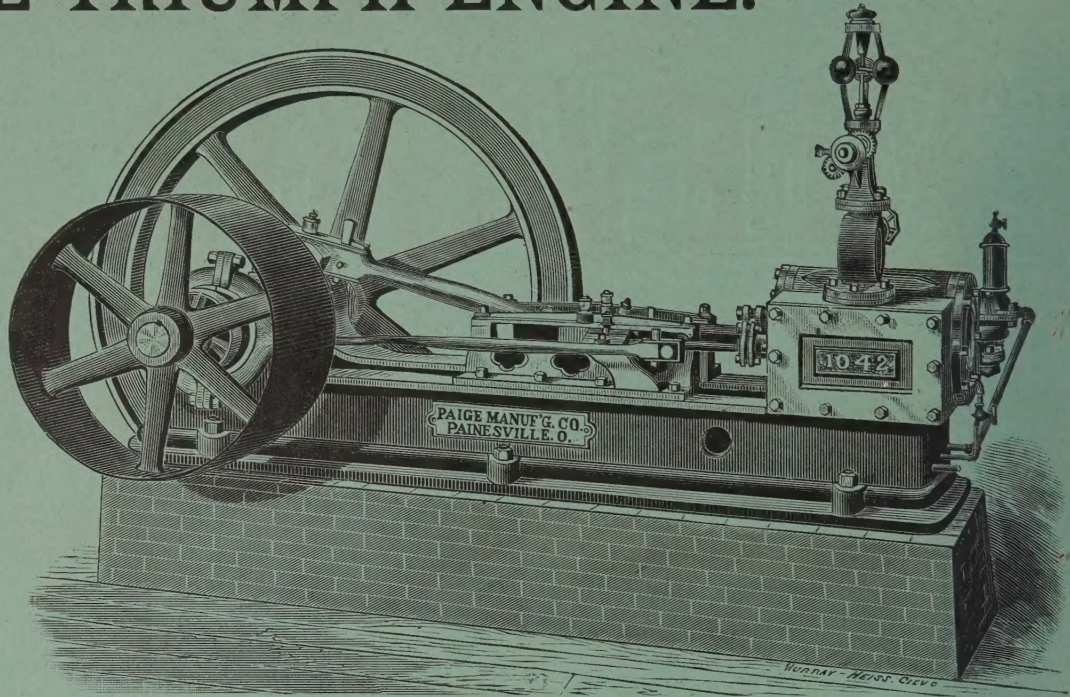
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OFFICE OF FIRE MARSHAL,
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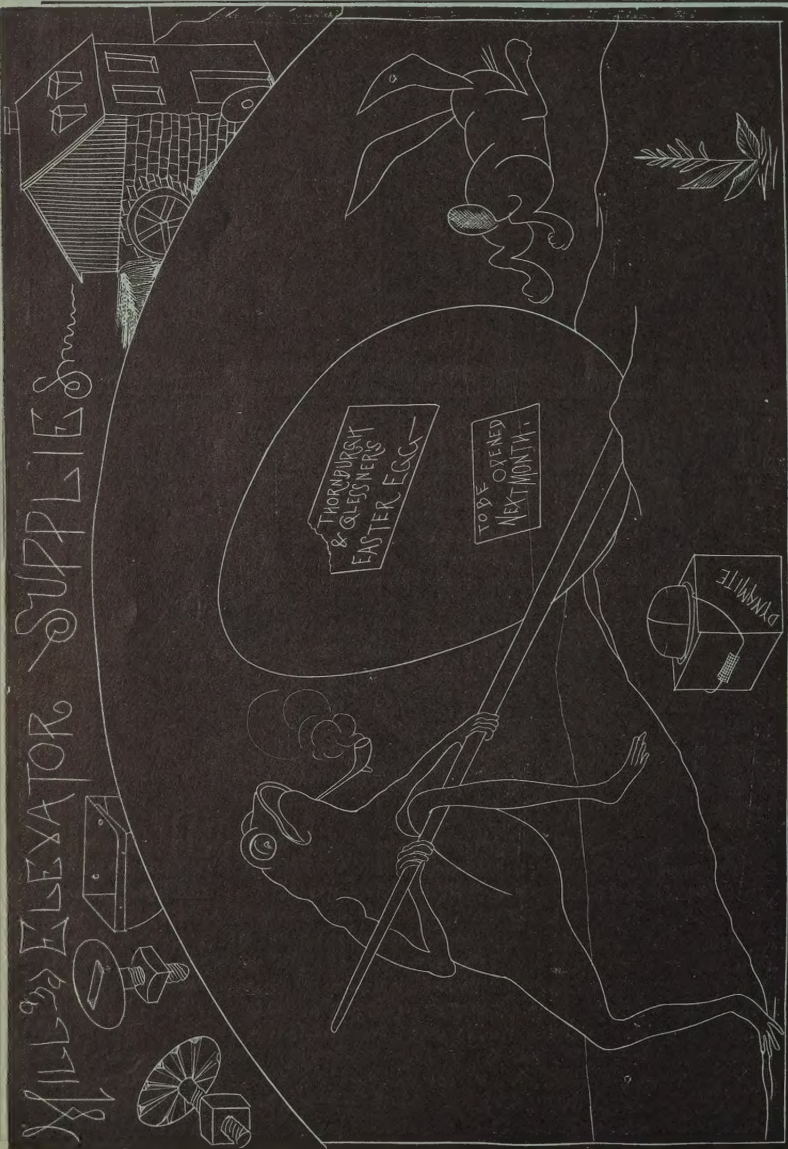
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A NEBRASKA ELEVATOR.

We present our readers, in this issue, with a view of a complete Seeley elevator, built by Seeley, Son & Co., of Fremont, Neb., for R. K. Johnson, of Valparaiso, Neb. The elevator is 40x40 feet on the ground, 32 feet from foundation to plate, and has a storage capacity of 40,000 bushels. The building is made square, mainly for the

with the elevator, gives a total storage-capacity of 70,000 bushels to the combined building.

Being a "Seeley elevator" the bins are all hopper bottomed, and in consequence the grain, by its own gravity, will discharge from the bins to the foot of the elevators, dispensing with machinery and power to run it. The main storage bins, of which there are eight about 40 feet deep, are brought near the ground, whereby the great

The engine and boiler-room floor, driveway, and working room floor being all on the same level, the engine, boiler, dump, separator, weighing-out scales, and all handles to gates and levers are within easy reach of the engineer, who can attend to his engine, unloading of wagons, elevating, cleaning, and weighing out into cars, and see that everything is running smoothly. Seeley, Son & Co. claim that ordinarily there is no use for



A NEBRASKA ELEVATOR.

reason that a house with a given capacity can be constructed with less material and cost in that form. The tower is 18 feet square, with 18 feet studding, making the extreme height of structure from ground to ridge of tower, 65 feet.

In the brick engine and boiler-room (which is 24x28 feet, and 23 feet high to plate) is a 20-horse power plain slide-valve Atlas engine, that does its work without any grumbling by itself or the engineer.

Connected with the elevator is a corn crib 30x100 feet, and 29 feet from foundation to plate. It has a tower extending the entire length, 100 feet, which is 6 feet wide and 7 feet high, making the extreme height of the crib 46 feet. It has a capacity of 30,000 bushels, which,

weight is supported directly from the ground, and with very little timber. There are also two smaller bins, directly over the separator, and one underneath it that may be discharged into either stand of elevators, as desired. There are also two shipping bins, with a weigh hopper underneath, for the purpose of weighing out grain as it is loaded into cars.

There are two stands of elevators, whereby cleaned and dirty grain may be elevated at the same time, or one may handle small grain while the other takes it from the sheller. They also form a support for the shafting, keeping it perfectly in line, as the stands of elevators are constructed entirely independent of the building, and as a consequence are not affected by the settling of it.

but one man about the elevator in country places.

In the elevator is a No. 5 Warehouse Separator, a No. 2 Victor Corn Sheller, and a No. 2 Corn Cleaner, manufactured by the Barnard & Leas Mfg. Co. of Moline, Ill. The separator and weighing out hopper scales (Howe's) are on the working floor. The sheller is below one of the dump bins, which is so arranged that grain, either small or ear corn, can discharge directly to the foot of the elevator or through the sheller. When shelling, the corn and cobs together are elevated to the corn cleaner, in the top of the building, where it is cleaned, and the cobs spouted to a bin in the boiler-room or outside of the building, as required.

When ear corn is to be cribbed it is elevated and dis-

charged into a Harrison Conveyor, first passing over an iron grating, which takes out all shelled corn, snow, and dirt, which, running through the entire length of the crib tower, discharges at any point desired, filling the crib full to the roof.

The conveyor consists of an endless wrought-iron chain, with wrought-iron push plates, so constructed as to do absolutely clean work in all kinds of grain—wheat, flax, etc., as well as ear corn. The upper strand of chain passes from the elevator over the center of the crib, its entire length, then down to the bottom, and returns to the elevator, directly under the center of the crib. It is thus utilized to return corn from the crib to the sheller. Grain can thus be taken from wagons, stored, shelled if necessary, and weighed into cars without the least waste or shoveling.

The points claimed by Seeley, Son & Co. for the Seeley Elevator are: Strength, convenience, large storage capacity compared with cost, every inch of room being utilized, small amount of machinery, hence little power is required, and last, but not least, all under complete control of one man on the lower floor.

On this page we present a sectional view of the Seeley Elevator, showing the location of the machinery: Warehouse Separator, Victor Sheller under dump, Corn Cleaner above weighing out hopper scales, stands of elevators, driveway, engine, and boilers. Seeley, Son & Co. will be pleased to give any information in respect to their mode of building elevators.

DIVERSITY IN AGRICULTURE.

The continued depression of the wheat market has stimulated the agricultural press to the discussion of its cause and remedy, especially in view of the rapidly increasing production of this cereal in other grain-exporting countries where cheap labor and almost limitless acreage threaten the American producer with a ruinous competition. The *Farmers' Tribune*, of Minneapolis, in this relation states that five years ago the farmers of Southern Minnesota were heavily burdened with mortgages, and threatened with bankruptcy. In this emergency, in preference to emigration, they abandoned the single-crop fallacy, and took to diversified production. The grain crop, on lands rapidly becoming exhausted, was exchanged for dairying, stock raising, etc.; and says the writer: "To-day there is probably not a more prosperous or contented rural population anywhere in the United States than those in the counties of Minnesota lying south of Minneapolis." The exhausted soils have been rejuvenated, debts paid, mortgages raised, and the tide of migration has turned from ebb to flow; while many old borrowers have now money to loan or invest in coupon-stocks. This should be a lesson and an example to large numbers of the producers of wheat alone in various sections of our country. It is not intended to urge the abandonment of wheat-raising, or to indicate that this noble cereal will ever cease to have a high value, especially those varieties and of that quality which commands the best markets at home and abroad. There should be no diminution of zeal in urging the increase and improvements of grain transportation and handling facilities, cheapening and hastening its delivery, and assuring its condition at seaboard ports. Special attention should be paid by grain growers, particularly of the favored hard wheat sections, to keeping up the quality of their seed, and in obtaining the varieties that will furnish the most desirable qualities in the product. To aid in this regard, the Millers' Association of Minneapolis, the Agricultural Department, and many dealers, are offering to supply sample seed of the most approved varieties. No pains also should be spared in attaining the highest art in the cultivation of the soil and care of the crop; thus both an increase of yield as well as great improvement in the quality of the product will be gained, and a certainty of its marketable value.

THE CHICAGO BOARD OF TRADE.

BY WARWICK A. SHAW, CHICAGO, ILL.

It may well be said that a visitor to Chicago in search of points of interest has not made a successful tour of that enterprising city until the mysteries of the Board of Trade have been investigated.

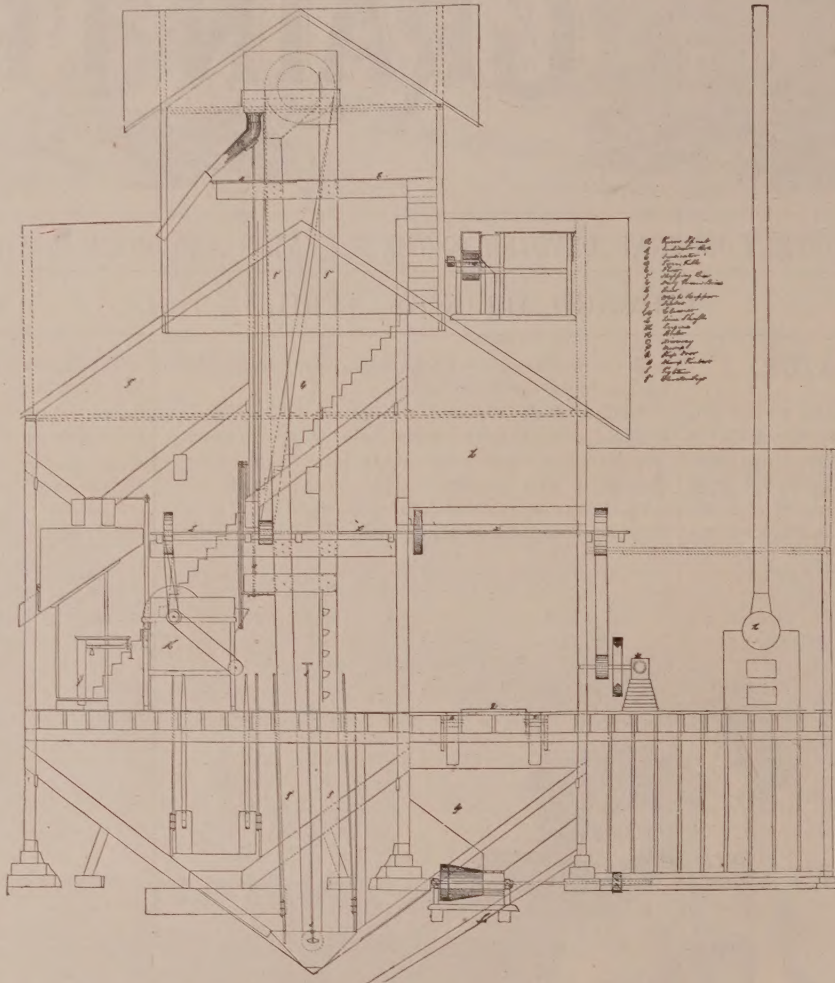
To the casual observer, as he gazes from the visitors' gallery upon the noisy crowd below, and listens to the din of many voices that greets his startled hearing, it would seem as if each and every member were doing his utmost to make a disturbance. But if he will send a communication through the door-keeper to some friend upon the inside, his friend will obtain for him at the secretary's office a visitor's ticket, which will admit him to the floor where all the hubbub is going on, when he will, for the first time, be enabled to distinguish something tangible in the wild gestures and noise which be-

commands. The grade is determined by certain prescribed rules laid down by the warehouse commissioners. A receipt is issued by the proprietors of the warehouse in which the grain is stored to the consignee of the grain. The receipt bears the grade on its face, and is sold on "Change." The government inspectors, in performing their duties, use an instrument called a "tryer," which consists of a tube closed and pointed at one end; slots are cut at short intervals along the entire length of the tryer, through which the grain pours when the "plunger," which is a wooden pole fitting into the tube, is withdrawn. The tryer is usually thrust into the grain in at least three places, and a sample obtained at each. These samples are put together in a bag, and from the aggregate the inspector determines the grade. Returns are made to the chief inspector of the car number, the contents of car, and the road over which it came. The chief inspector is appointed by the Governor.

In the trading pits before mentioned sales are made for future delivery, the grain to be delivered during a certain month at "seller's option." For example: If a trader wishes to sell 5,000 bushels of wheat for delivery during the month of June at \$1.05½ per bushel, he goes into the wheat pit and calls, "Seller five June at a half." Every other trader that hears his offer knows what he means. If any one wishes to take the trade he nods his head or holds up his hand to the offering party. Each party to the contract puts down the transaction on his trading card.

There is a class of speculators that trades to take advantage of the fluctuations of the market from minute to minute. It requires quickness, adroitness, and a certain amount of intuition to make a success in this line. Then there is another class which speculates on some future steady advance, which is anticipated on account of certain natural causes, such as the receipts and shipments, the prospects of crops and the general status of trade. The former class speculates to make small profits and quick ones, and if the market goes against a dealer of this class a half a cent or so, he is quick to change sides and take advantage of the popular movement. The latter class stands a very heavy loss before changing sides, having nothing to do with petty fluctuations, but only with the grand result.

There are some instances in which trading in futures is not speculation in the sense of gambling. For example: Where parties having grain which they have bought at country stations, en route for Chicago, desire



SECTIONAL PLAN OF THE SEELEY ELEVATOR.

fore were unintelligible to him. In one part of the trading hall is situated the "wheat pit," and in another the "corn pit," these pits being occupied by members buying and selling. In another part of the room stands the "lard crowd," in another the "oat crowd," or rye or "barley crowd."

Somewhat to the left of the corn crowd may be seen a little knot of men chartering vessel room or engaging freight. In the west corners of the room are located the telegraph offices, with their efficient corps of operators. Back and forth between the trading pits and these telegraph offices dart quick and bright-witted clerks, posting the customers of the firms they represent with each fluctuation of the market.

In different parts of the room are placed blackboards, on which are marked quotations and telegraphic items of various kinds.

On either side of the room tables are placed, on which are displayed samples of flour and grain from which the bulk is sold.

Grain lying in cars not consigned to go into the public warehouses is designated as "track stuff," and is sold by sample after being inspected by the state inspection department. On the other hand, grain which goes into store, although it is likewise inspected, is mixed with other grain of the same kind and grade, and is sold according to the regular market price which that grain

to take advantage of the high prices which the future markets are commanding on that day, and sell their grain, to be delivered in the future; in such a case it is obvious there is no hazard attached to the transaction.

Board of Trade business is greatly divided. First among the different branches may be mentioned the regular receiving commission business. Commission merchants in this kind of trade, in the majority of cases, advance money to their country customers, with which to buy grain, which is shipped them, a commission being charged on all grain so received and sold. When a car of grain arrives in Chicago, after being inspected it is stored in the regular public elevators lying on the tracks of the railroad over which the grain arrives. The "receiver" sells the receipt issued by the elevator company, or if it has been already sold it only remains that it shall be delivered and payment received.

In many cases the commission merchants own the country elevators, which they either lease to their customers or run them themselves through their salaried agents, buying from the farmer and selling on "Change" in Chicago. The receivers telegraph their agents the market price in Chicago, with instructions to buy, and at the same time they sell for future delivery, and depend on the arrival of the grain to fulfill their contracts, as has already been stated. Then there are the "shippers," who usually ship on orders from Eastern custom

ers, and sometimes on export orders. Occasionally a shipper consigns grain Eastward on speculation, but usually it is the case that there is sufficient margin between Western and Eastern prices to afford an opportunity to make a profit on the shipment without chance of loss. When a shipper gets his bills of lading he draws against them immediately, and obtains advances on the draft at his bank.

There are also men who make a business of buying grain of an inferior quality, and out of condition, and by a process of cleaning and drying bring it up to a higher grade, making the profit incident to the change. And lastly, as has been before mentioned, the option brokers, who handle the actual grain but very little, and buy and sell for future delivery on orders from their customers.

Option brokers avoid, if possible, having grain delivered to them, as the storage money, which comes due every ten days, is entailed on the party holding the warehouse receipt the day the storage falls due. By Board of Trade rules no storage is deducted from the value of the receipt until five days have elapsed from the time the grain went into store; after that a half a cent per bushel is deducted for every ten days that it runs, or a fractional part, because the last holder of the receipt will have the storage to pay to the elevator company. So if a receipt is dated June 1, a dealer who buys it July 3 deducts a cent and a half per bushel from the market value of a like amount of grain for storage. This is not the full rule for figuring storage, but it serves to illustrate the principle. The method of reckoning storage among Board of Trade men and the method used by the elevator companies are entirely different, although the result is the same. It is sufficient for the objects of an article of this character to say that the difference in storage has to be paid by the party last holding the receipt.

In order to avoid having grain delivered, thereby incurring storage charges, and also to save labor, the system of settlement has been adopted. Some option broker, for example, has orders from a customer to buy 5,000 bushels of corn at 55 cents per bushel, and upon a decline in the market, on the following day, has orders to sell the same at 53 cents per bushel; upon filling his orders, the broker closes out the "deal," as it is called in Board of Trade vernacular. The broker then sends his clerk into the "settling room," where a hundred or so clerks of other houses are engaged in "settling deals." The clerk ascertains what firms have deals with the firms which are involved in the "deal" he is trying to settle. He then makes an agreement by which such firms shall consider their obligations adjusted, and the differences shall be paid over to the party in whose favor the balances stand. For example: The broker, A, has corn bought from B at 55 cents; he has sold it to C at 53 cents. A's clerk makes an agreement with D (who has corn bought of C at 50 cents, and sold B at 51 cents) by which, if it is agreed to by B and C, it shall be considered that A has received the corn from B, and has delivered it to C, and that C has delivered the corn due to D, and D in his turn to B, and so they stand on an equal footing, except that the differences in the prices are to be paid to the parties to whom due. A has lost two cents per bushel, C three cents, D has made one cent, and B four cents. A therefore pays \$100, C \$150, D receives \$50, and B \$200. This is called making a ring. Millions of bushels are settled up each day in this manner. Each settling clerk has a badge which costs him \$10, and admits him to the settling room and to the Board of Trade floor, but in the latter case only for the purpose of addressing his employer.

At 1:30 o'clock the clerks of the different concerns meet to deliver and receive grain receipts due on "option" contracts that have not been settled up. The delivery of a warehouse receipt properly indorsed by the first receiver, in blank, is a transfer of property without reservation of any rights or of any equities, it being a negotiable instrument, made so by legislative enactment. These warehouse receipts are considered by the banks as gilt-edged security, and money can readily be obtained on them at a low rate of interest.

Hitherto only the sale of grain and flour has been noticed, and it would be a very great mistake not to mention the tremendous trade which is done on 'Change in pork and lard. The dealings in these lines are enormous, and the firms trading in them rank among the wealthiest on the board.

During the year ending Nov. 30, 1883, the total number of hogs killed at the Stock Yards for packers and city use was 4,532,578.

The price of membership tickets is fixed by the Board

at \$10,000, but as there are firms constantly going out of business and selling their membership, the market price of tickets is kept at about \$3,500 or \$3,800. Four years ago tickets could have been bought at \$250, but the increase in business has made a demand for them, hence the present high figure.

The hours for trading are from 9:30 A. M. to 1 P. M. At 2:30 P. M. the "Call Board" meets. This is an institution which has no connection with the regular "Board," although most of the prominent members are also members of the "Call Board." On the "Call" provisions and grain are bought through the caller, who acts as "go-between" for the different contracting parties, everything being recorded which is bought and sold. This is the only institution in which a member of the regular Board can trade outside of the regular hours set apart by that institution for the purpose.

In addition to the institutions spoken of, there have sprung up numerous others, where opportunities for speculating in a small way are offered to the wary and otherwise. These have been dubbed "Bucket-Shops" by the Board members. No trading is done on the regular Board on less than 5,000 bushel lots, but in the "Bucket-Shops" 500 bushel lots are bought and sold. Besides these "Bucket Shops" there is a place called the "Open Board of Trade." This institution is a growing one. Its commission charge, like that of the "Bucket-Shops," is only an eighth of a cent per bushel, and owing to the fact that for some time the commission charged by members of the regular Board has been a quarter of a cent, the "Open Board" has acquired a large portion of trade that otherwise would have gone to the regular "Board." However, the Board of Trade has now abolished the "quarter-of-a-cent" rule among its own members, and to them the charge is an eighth only, a quarter being charged to outsiders.

It is the custom for persons trading through a broker to make a deposit as security against any loss which may arise. This is dispensed with only when the broker has confidence in the ability and willingness of his customer to stand by his contracts. On "Change," however, between broker and broker, security is not asked for until the market has gone against one of them, and frequently not then, unless there is a flurry. When one broker wishes security from another he "calls him margins." The broker "called" responds by placing the required amount on deposit in his bank, for which a margin receipt is issued, likewise a duplicate, the original being retained by the broker depositing the security, and the duplicate given to the broker asking security. When the trade is settled up and the differences are paid, the duplicate is indorsed over to the depositing broker who collects the money on deposit. If a broker, on notification, refuses to put up margin, the broker calling him closes out the deal and sends in a bill for differences.

There are over 1,900 members of the Board, the majority being in the prime of life. They are a jolly set of fellows, and always good humored, and when business is not pressing, delight in having a little sport among themselves, throwing bags of flour, smashing hats, throwing corn, and singing being their favorite amusements. The members always give a hearty greeting to all prominent personages who honor them with a visit, and manage to snatch a few moments, even in the busiest times, to listen to a speech, which is usually looked for.

Of a necessity Board of Trade business is transacted to a large extent on the good faith and honor of the members. In the long history of this remarkable body of men, it has seldom, if ever, occurred, out of the millions of bushels delivered on option contracts, that any of the receipts have been lost to the owners. It is, perhaps, a little marvelous that such is the case, taking in account the tremendous amounts which were sometimes delivered within a very few moments, and the ease with which a merchant could have taken advantage of the hurry to retain receipts delivered to him in error, were he disposed so to do, for it has frequently happened that receipts have been delivered to wrong parties.

On delivery days (before grain was delivered, as it is at present, in the Board of Trade Hall) it was usually a sight of sufficient interest to cause a crowd to gather; and on the day the great Sturgis "corner" in corn culminated, fully 10,000 people witnessed the deliveries, every window up and down La Salle street was open, and the occupants of the adjoining rooms taking in the spectacle. Hundreds of clerks, with coats and vests off, were on the street, straining every nerve to make their deliveries, and when the bell sounded, the great shout

that went up announced that the corner was finished.

The system now in use does away with delivery of grain from office to office on option contracts. The option deliveries are made at 1:30 P. M. in Board of Trade Hall, cash grain and car lots being delivered at any time of day from office to office.

On the first day of the month, and on the last day, deliveries are very heavy, being the first and last opportunities, respectively, for delivering the grain sold for that month. These heavy deliveries cause the clearings of the Chicago banks to swell to about three times the ordinary amounts, by reason of the extra amount of checks given in payment of the grain receipts. A system has lately been adopted by the Board for settling differences, which is modeled after the system used by the bank clearing-house. By this new system the representatives of the various members meet at 9 A. M., with lists of the amounts due to them from other parties, and due from them to other parties. The total of the amounts due from one firm to many is debited to the account of that firm, and the amounts due from the many to the one are credited to that firm's account. If the firm brings up a larger list of debits than credits, it must pay the difference into the clearing-house, but if it has a larger number of credits than debits the clearing-house must pay it the amount due. By the means of this clearing-house, the making out of a large number of checks is done away with, which greatly relieves the bank clearings.

The old custom of buying and selling "puts" and "calls," or privileges, is still a great favorite (although it is not a legitimate transaction to deal on a privilege). A "put" is a privilege sold by one member to another by which the first member agrees to receive the stipulated amount of grain at a certain price, usually about a cent below the market price at the time of selling the privilege. It is usually sold good for one day only, though sometimes for a much longer time. The party buying the "put" can use it or not, as he chooses. If the market goes down below the price the "put" was sold for, the party who bought the privilege buys in the grain, and if the market goes no higher he "puts" it to the party who sold the privilege; that is, he notifies him to put it down as so much grain bought, which being done, the grain is delivered to him in the ordinary way, or settled up by making a ring as already described. Thus the party has bought at a low figure and sold at a higher one, making the difference. If, however, after he buys his "put," the market goes up instead of down, his "put" is worthless.

A "call" is a privilege to call on the party selling it, for the delivery of the amount of grain specified. If the market, on the day for which the "call" is good, is above the price mentioned in the "call" as the price at which the first party will deliver, the party who bought the "call" sells the grain, and calling for the grain at the set price, makes the difference.

A "put" or a "call" in wheat costs \$10. The advantage derived from a "put" or "call" to the party buying it is, that he can trade on the market without fear of loss beyond the amount paid for the privilege itself. It is nothing more or less than a species of insurance against loss in trading.

Efforts have been made to prohibit the sale of "puts" and "calls." The Board rules do not recognize them as binding contracts, and they depend, therefore, on the honor of the party selling them.

The Board of Trade was a voluntary organization from 1848 to 1849. In 1850, however, it was organized under the state laws. Since 1859 it has existed under a special charter from the state. Its first meeting was held March 13, 1848, over a store on South Water street, Thos. Dyer being the first acting president. From South Water street it moved from place to place until it finally settled on the spot where it now stands. There it remained until the great fire of 1871, which, sweeping away the building, forced the members into a small building on Canal street. The ashes of the old building were scarcely cool when arrangements had been made for rebuilding, and in 1872, a year from the destruction of the old building, the new and present structure was dedicated to the uses of trade. The building as it stands to-day is three stories in height, the first and second stories being used as offices, and the third as a trading hall at the north end, and for director's and secretary's rooms at the south end, the trading hall occupying about three-quarters of the floor. The trading hall is 142 feet long, 87 feet wide, and 45 feet high. Windows extending from the floor to the ceiling afford ventilation as good as the

size of the room will permit. A large elevator, which is constantly in use, runs from the ground floor to the trading hall. The governmental machinery of the Board is very good in its arrangements. There is a "floor manager," a "committee of appeals," and nineteen "standing committees." The Board makes the appointment of five inspectors, one of flour, one of provisions, one of sample grain, one of hay, and one of flaxseed. The Board also appoints a weigher of packing-house products, and one of other commodities. The officers consist of a president, a first and a second vice-president, a secretary, an assistant secretary, and a treasurer.

The rapid growth of the Board business has made it necessary that a larger and more commodious building be secured. A new building, therefore, is in process of erection, which is to cost in the neighborhood of \$2,000,000. It is built by the Board of Trade, bonds being issued for its construction, as the charter will not allow the capital of the Board to be above a specified amount. This new building is to be 235 feet side by 169 front, the trading hall 169 feet long, 150 feet wide, and 80 feet high. The Hallowell granite, of which the building is to be constructed, is a very handsome stone. The pillars supporting the front entrance are highly polished, and are of the same material. The building will command La Salle street, facing north, being built on what formerly consisted of two squares, one on each side of La Salle street, the street being closed at that point in order to form one solid square, this being only accomplished after litigation.

It was little dreamed when, thirty-six years ago, a few men joined together to form this institution, that it would ever assume the enormous proportions to which it has attained. But the centering of giant railroad interests in the city of Chicago, and the excellent grain-storing facilities therein afforded, together with the competition in Eastern freights made by lake shipments, against other grain cities having only railroad facilities, have made the Chicago Board of Trade the greatest in the world; its members, among whom are found men of large views and intellectual attainments, ranking second to none in force, energy, and integrity.

FACTS ABOUT CEREALS.

The statistics of our cereal productions and their value in 1882 present a fair average for a series of years, although varying with the different grains. The average yield of all cereals that year was 21.3 bushels per acre, against 21.3 and 16.7 respectively in the two preceding years. Corn fell below the average of ten years, viz., 26 bushels, being 24.6 bushels per acre; the average price was 48 cents, or \$11.31 per acre. The yield of wheat was above the general average of 12 bushels, being in 1882 13.6 bushels per acre. The average price was 88.2 cents per bushel, or \$12 per acre. The average yield of rye was 13.4 bushels per acre; and the price 61.5 cents per bushel, or \$8.24 per acre. Oats made a better yield in 1882 than in any year since 1879, the average being 26.4 bushels, and the price 37.5 cents per bushel, or \$9.64 per acre. Barley averaged 21.5 bushels per acre, valued at 62.8 cents per bushel, or \$13.50 per acre. Buckwheat, which is classed with the cereals, was less productive than usual, averaging 13.1 bushels per acre, valued at 72.9 cents per bushel, or \$9.48 per acre.

The total rye crop of this country in 1882 was about 2,230,000 bushels, valued at about \$18,440,000. Our crops of the other principal cereals that year aggregated in round numbers a value, respectively, of \$784,000,000 for corn, \$445,000,000 for wheat, and \$183,000,000 for oats.

The cultivation of rye on the Continent is much more extensive. The aggregate of this crop in Austro-Hungary in 1882 was about 133,000,000 bushels. In France the rye crop that year was about 84,000,000 bushels, and this kingdom has a remarkably large consumption of wheat. North Germany in 1882 had a crop of rye aggregating about 252,000,000 bushels, against a wheat production of some 94,000,000 bushels. The rye crop of Russia, reported in 1880, aggregated 518,000,000 bushels, against less than 164,000,000 bushels of wheat. The United Kingdom, as with us, produces a comparatively small crop of rye.

The buckwheat crop of this country is smaller than that of any of the cereals, being reported in 1882 as aggregating a little over 11,000,000 bushels, rye with a yield of about 30,000,000 and barley nearly 49,000,000 bushels coming next. Of this total some 5,200,000 bushels are grown in about equal quantities in New York and Pennsylvania. Ohio produced some 342,000 bushels, and New

Jersey, West Virginia and Wisconsin from 275,000 to 300,000 bushels each. In most of the Southern states no buckwheat is raised. The United Kingdom reports no crop of buckwheat. In 1882 the buckwheat crop of Austro-Hungary was about 1,100,000 bushels; of France 1,600,000; and of North Germany 6,500,000 bushels. In 1880 Denmark had a crop of about 4,500,000; and the average buckwheat crop of Russia for the three years ending with 1879 was about 81,000,000 bushels.

A NEW BELT LACING.

We give from the *Scientific American* the annexed illustration of a method of belt lacing, which the writer says he has found satisfactory. He claims that it runs smoother on small pulleys as it bends to fit them. The manner of lacing is to commence in the middle, or on



either side. If in the middle, divide the string into equal lengths; if on the edge, same as sketch, by fastening one end and running across and back. The apparent advantage of this lacing is the pliability at the joint, allowing the belt to bend evenly upon the pulley.

ELEVATORS VERSUS FLAT WAREHOUSES.

The *Winnipeg Commercial* argues the case of elevators vs. "flat" grain warehouses in the interest of the former with the following considerations: At present prices of material a flat house of 10,000 bushels capacity and roomy enough for fanning mills, would cost about \$4,500; an elevator without cleaning machinery about \$7,000. Calculating at the present prices of first-class appliances for cleaning would make the total cost of elevator equipped double that of the former. Estimating, however, the comparative expenses of handling grain in both, the writer claims that the warehouse would require three men to clean and handle a car load, or 500 bushels per day; while the above-sized house could only clean three loads per day at a cost of \$18 for labor. On the other hand, the elevator as above described would easily unload twelve cars per day, at an expense for fuel and labor, all told, of \$3, or only half the cost of one car load by the "flat" house. The clerical and other expenses common to both are not here estimated. For the warehouse to equal the day's work of the elevator would require an expense, says the *Commercial*, of \$72, against \$3 by elevator; or in sixty-five days the latter would save the total difference in their original costs. Estimating the wheat crop of that section for 1884 at 9,000,000 bushels, and comparing the expenses as above noted, there would be a net saving by the elevator system of \$103,500 in the year, or enough to fit out about twelve elevators of 10,000 bushels capacity. The writer considers the minimum capacity, fixed by the C. P. Railway, very much too high, but believes that it is right in principle "not to allow on their track any of these overgrown dry goods boxes, which are only monuments of shiftlessness, and which, with other antediluvian institutions, have aided in making Eastern Canada a by-word in all the progressive parts of the American continent."

Grains of the different kinds produce alcohol in about the following proportions: Corn affords 40 pounds of spirits of the specific gravity of 0.9427, containing 45 per cent of absolute alcohol for each 100 pounds of grain; wheat, 40 to 45 pounds of spirits; barley, 40; oats 36; rye, 36 to 42; buckwheat, 40. Now, forty pounds of such spirits equal three and a half gallons of government-proof spirits. Taking corn at 56 pounds per bushel, rye at 56 pounds, wheat at 60, barley at 48, oats at 32, and buckwheat at 52, these grains should afford the following quantities of proof spirits per bushel: Corn and rye each, 1.96 gallons, or almost two gallons; wheat, 2.1 gallons; barley, 1.68 gallons; oats, 1.12 gallons; and buckwheat, 1.82.

Legal Notes.

Commissions for Option Deals.

When a broker is privy to the unlawful design of the parties to an "option deal," and brings them together for the very purpose of entering into such an illegal agreement, he cannot recover for services rendered or losses incurred by himself, in behalf of either, in forwarding the transaction.—*Irwin vs. Williar, United States Supreme Court.*

Wagering Contracts.

1. Transactions in which it was the understanding between the parties that there was to be no delivery of any goods, but that the "deals" should be closed by a mere settlement of differences, are not sales and purchases, but mere bets, which the courts will not enforce. 2. Where a broker engages in such enterprises for others, with knowledge of their real character, he cannot recover for any losses he may sustain by his brokerage.—*McLean vs. Stuve, St. Louis Court of Appeals.*

Privy of Contract.

H was a broker in St. Louis and N a broker in Chicago. They were correspondents under an arrangement by which each was to forward orders to the other, the forwarding to be the guarantor of the order, the commissions to be equally divided between them. H received orders from M for a deal in pork, which were executed by N under directions from H, and the deal closed out by N under the directions of H for failure of M to put up margins. Held, in an action by H as assignee of N against M, for losses in the transaction, that there was no privity of contract between N and M, and that there could be no recovery by N, nor by H as his assignee, against M for the loss. The sub-agent has no right of action against the principal, where the intermediate agent was an independent contractor.—*Hill vs. Morris, St. Louis Court of Appeals.*

Contract for Future Delivery—Warehouse Receipts.

A contract for the future delivery of grain, where neither party intends that the article sold shall be delivered, but that a settlement is to be made according to the difference in the market value, is a gambling contract, and void. But the intention of only one of the parties that there shall be no delivery, not communicated to the other, does not make the contract illegal; nor does the fact that the purchaser is required to put up a margin as security; nor that the ratio of damages agreed upon in case of a breach is the difference between the contract price and the market value; nor that the seller has an option as to the precise time of delivery only, the legal effect of the agreement being that delivery must be made within a limited period. Warehouse receipts are negotiable by delivery, and, where their integrity is not impeached, are sufficient evidence of property, and of the holder's ownership therein. In contracts of this kind it is easy for parties having an illegal intent to make a written contract valid in form, hence it is often necessary to go behind the words of the contract to see if it was a bona fide purchase or a gambling transaction.—*Wall vs. Schneider, Wisconsin Supreme Court.*

Consignment of Wheat.

A & Co. had wheat consigned to them, and the carrier, a railway company, sent to them an advice note stating that the grain had been received, and was held subject to their order. There was no memorandum of weight or charges, but across the blanks for these was written "Account to follow." At the bottom of this note was a delivery form for the consignees to sign: "Please deliver to — or bearer." A & Co. signed this paper to C & Co., who made an advance upon the shipment, and having presented or lodged the order with carrier, had it accepted by it. Afterward the railway company sent another advice note for the same wheat upon the same printed form as the first note, with the words "Charges only" written at the top of the paper. A & Co. falsely representing to C & Co. that this was another consignment, got from them an advance upon it. This paper also was lodged with the company by C & Co., and was accepted. For the loss on the second advance C & Co. sued the company, *Coventry vs. Great Eastern Railway Company*, on the ground of negligence, and recovered. The case was carried to the English Court of Appeal, where the judgment was affirmed. The Master of the Rolls, in his judgment, said: "If the documents would have to persons in plaintiff's position the meaning they

attributed to them, the sending out of two sets of papers relating to one parcel of goods can hardly be said not to be negligent. The consignees, through the negligence of the defendant, were enabled to commit a fraud, and for this negligence they are liable for C & Co.'s loss."

Fraud of Agent—Liability of Principal.

A railroad agent, by adding to the weight of goods, had defrauded the shipper of \$307.80, for which fraud judgment was recovered against him, but no part of it was paid. An action was then brought against the railroad company to recover this sum so fraudulently taken by its agent while acting within the scope of his agency. The company made three defenses: 1. That the fraud had not been committed within four years, and therefore the action was barred. 2. That there was a judgment in full force, against the agent for the sum claimed. 3. That the company was entirely ignorant of the fraud, and had never received any of the excessive charges. The court below gave the defendant a judgment, and the plaintiff carried the case to the Supreme Court, where he prevailed. The Chief Justice, Granger, in the opinion, said: "1. The statute did not begin to run until Maple discovered the fraud, and as he had brought his action within that time it is not barred. 2. The second defense presents an interesting question. In presenting and collecting freight bills, the agent 'acted within the scope of his authority.' The company held him out to its customers as its representative in the matter. So long as the bill he presented did not by the weights or prices noted therein furnish fair reason to question their truth, a customer of the company had full right to rely upon them as being the demands of the company upon him. The mere taking judgment against the agent for such a claim as this should not, when the judgment is unsatisfied, extinguish the claim. 3. When an agent, acting within the scope of his authority, commits a fraud, that the principal was ignorant of the fraud, did not receive any profit therefrom, and never ratified it, does not relieve him from liability for the fraud."—*Maple vs. C., H. & Dayton R. R. Co., Supreme Court Commissioner of Ohio.*

Communicated.

POWER FOR SMALL ELEVATORS.

Editor American Elevator and Grain Trade:—Which is the more practicable for a small wheat elevator, the sweep power or the improved geared tread power? It seems to me that the tread power would give a steadier, more positive motion for driving small elevators and grain separators, which is a very important factor in grain warehouses. I would be pleased to obtain the desired information on this subject through your valuable paper. Yours truly, C. GRULER, Fowler, Mich.

[We would like an expression of opinion from our readers on this subject.—Ed.]

The daily sessions of the Corn Exchange of Montreal, Que., owing to the prolonged stagnation in the grain market, are as unproductive as a week of Sundays, and shippers and dealers are solicitous as to the prospects of the coming season. While it is admitted that the English grain markets are fully supplied, the trade complain that the bondage national policy nuisance prevents Western shippers from sending grain to that port who prefer New York or other free markets.

Indian corn, or maize, as our English friends call it, will probably always be the staple grain in this country. It is adapted to our climate, and we know more about its cultivation and requirements than any other people. Though attempts have been made to grow it in England, they have nearly always failed to go beyond producing ears suitable for cooking green, and sometimes even this success was not attained. Considerable corn is grown in Southern Europe and Northern Africa, but it is not probable that the growing demand in England for feeding purposes can be supplied except from the surplus of our harvests. If we manage rightly we can keep the control of both corn and cotton in the markets of the world. This is a matter of great importance, for we have the soil and facilities for growing corn cheaply and in quantity equal to any possible demand.

The Howe Scales took first premium at Philadelphia, Paris, Sydney, and other exhibitions. Borden, Sellick & Co., Agents, Chicago, Ill.

Late Patents.

Issued on March 11, 1884.

FLAXSEED CLEANER.—George Beal, Gilman, Iowa, (No model.) No. 294,841. Filed Nov. 10, 1883.

GRAIN WEIGHER AND REGISTER.—George D. Baird, Washington, Ill. (No model.) No. 295,095. Filed Aug. 6, 1883.

Issued on March 18, 1884.

MANUFACTURE OF PULLEYS, ETC.—Henry H. Blake, Pittsburgh, Pa. (No model.) No. 295,336. Filed Aug. 11, 1883.

COMPOUND PULLEY OR WHEEL.—Henry H. Blake, Pittsburgh, Pa. (No model.) No. 295,337. Filed Oct. 31, 1883.

SECTIONAL STEAM BOILER.—Heman A. Barnard, Moline, Ill. (No model.) No. 295,328. Filed Dec. 13, 1883.

MACHINE FOR THRESHING AND SEPARATING GRAIN, PEAS, ETC.—Alfred Swingle, San Francisco, Cal. (No model.) No. 295,305. Filed Dec. 11, 1883.

AUTOMATIC GRAIN WEIGHER.—Thomas L. Easley, Ladonia, Nev. (Model.) No. 295,373. Filed Sept. 12, 1883.

Issued on March 25, 1884.

CYLINDER FOR CLOVER HULLERS.—Horatio N. Land and Howard Campbell, Richmond, Ind., assignors to Gear, Scott & Co., same place. (No model.) No. 295,771. Filed Jan. 7, 1884.

SCREW CONVEYOR.—Frank C. Caldwell, Chicago, Ill. (No model.) No. 295,731. Filed Sept. 4, 1883.

GRAIN DRIER.—Ralph S. Jennings, Boston, Mass. (No model.) No. 295,643. Filed May 7, 1883.

PULLEY.—Frank C. Caldwell, Chicago, Ill. (No model.) No. 295,732. Filed Sept. 4, 1883.

Issued on April 1, 1884.

BELT GUIDE.—Jonathan J. Moore and James A. Ball, Thorntown, Ind. (No model.) No. 295,932. Filed Jan. 19, 1884.

ELEVATOR BUCKET.—Joseph A. Holmes, Greenland, N. H. (No model.) No. 296,008. Filed Feb. 27, 1884.

SELF-LUBRICATING LOOSE PULLEY.—Edward F. Gordon, Concord, N. H., assignor of one-half to Horatio Hobbs, same place. (No model.) No. 295,999. Filed Oct. 8, 1883.

SPROCKET WHEEL.—Benjamin A. Legg, Columbus, O., assignor to Joseph A. Jeffrey, same place. (No model.) No. 296,192. Filed Feb. 14, 1884.

Issued on April 8, 1884.

DRIER.—George H. Immendorf, Philadelphia, Pa., assignor to Henry G. Morris, same place. (No model.) No. 296,572. Filed April 10, 1883.

ELEVATOR FOR SEED-COTTON AND OTHER MATERIALS.—Sidney W. Bartholemew, Castalia, N. C. (No model.) No. 296,509. Filed Aug. 25, 1883.

COMBINED FANNING MILL AND SEED CLEANER.—Newton M. Bowen, Knightstown, Ind. (No model.) No. 296,309. Filed Nov. 10, 1883.

RAILWAY POOLS.

[Abstract of a paper by Mr. Blanchard, in the *Railway Review*.]

They [railway "pools"] are the equalizing machinery, or fly-wheels, or rates to secure non-preferential, and therefore legal, charges which the common, statute and commercial law requires of railways, as common carriers for the public interest, as against other railways, localities and forwarders that would make them unequal, preferential and discriminating, and therefore illegal. Beyond this they are the railway ordinances and sheriffs that prescribe justice and preserve order, and compel the return at its full value to the honest railway of traffic stolen by deception, if the theft cannot first be prevented.

That rates must be established by some form of agreement is more a public than a railway necessity, because railways can make and charge rates without conference with forwarders; but forwarders must know from the railways the rates, conditions, classifications, etc., to which they are subject.

Attempts were formerly made to secure a semblance of this desirable railway unity and public parity by isolated and diverse action in various cities and states, but they failed—as they must always fail—from want of uniform action.

Great public wrongs and mercantile discord unquestionably resulted from counteraction, and also from the attempts of older railways to prevent new ones from securing traffic in what the older arbitrarily regarded as either due or undue proportions, and in the equally arbitrary determination of the newer roads to maintain

their rights. In these latter aims each railway enlisted a set of business champions called "our shippers," who in return for their business were fed on palatable drawbacks, preferential car supply, free passes, etc. Merchants with the largest resources and needing the least aid were usually the chosen beneficiaries. The concessions paid to their tonnage and influence further increased their capital and resources, until they became the preferential patrons of railways that should have been common carriers, and seized the traffic of other firms, or deterred new ones from being established. The localities of these contests became centers that unduly absorbed the smaller tonnages of adjacent towns, lower rates often ensued at the railway junctions than at nearby local points, and this brief epitome was repeated in far too many instances.

The gainers could only be a few preferred forwarders and localities, or a powerful railway, but the losers were the mercantile and investing public, needlessly wronged by wasteful losses and unjust preferences.

Every wrong to the transporter and the forwarder could have been avoided by unity, conference and arbitration.

These private and railway contentions would have resulted in earlier corporate and public evils but for the civil war and the enormous growth of traffic and railways which ensued; but after the business collapse of 1873 those evils thrived with new vigor, until they culminated in 1876 and 1877 in a prolonged railway war, to secure the lesser tonnage moving, and in a contest of New York against Baltimore, which time has proven was needless. Unjust discrimination and preferences increased, and disturbed trade in the same localities. Railway revenues were squandered in folly, not competition, and combined action to arrest this condition became quite as much a public as a railway need.

In 1877 these causes led to the organization of a railway commission, consisting of one delegate from each trunk line, with Mr. Albert Fink as commissioner. The purposes, growth and scope of this agreement have been so assailed that I here copy its preamble, which expresses the essence of all railway "pools," as it does justice to the railways:

"For the purpose of maintaining reasonable and uniform rates of freight to all shippers, and of preventing unnecessary and injurious competition," etc.

To this organized nucleus and purpose other railways were each asked to send one delegate for co-operation. This aggregate delegation is called the Joint Executive Committee, but if Western members cannot attend they depute members on the trunk-line Executive Committee to act for them, which, therefore, becomes a standing committee.

The proceedings of these various committees are published and sent to all their members. There is no secrecy about their deliberations. The statistics are furnished daily, weekly, monthly and annually. The arguments before the board are printed, and its decisions are published. The newspapers publish their material action as rapidly as they act, and public sentiment reacts promptly on the slightest cause.

The foregoing are the objects and organization of the commission frankly displayed. What has it accomplished as to rates?

Large and small merchants in all trades in all parts of the country have secured lower westward rates by this railway co-operation in an average of 25 per cent. Large reductions have been made eastwardly in the same period, as follows:

	Classes							
Chicago to New York.	1	2	3	4	5	6	7	8
In July, 1877.	120	90	70	60	70	70	25	20
Present rates.	100	85	70	60	50	45	20	15

The general tendency of traffic organization to reduce rates is further noticeable and proven. The Southern Railway Association, organized nine years since, has reduced first-class rates from New York to Atlanta from 1.70 per 100 pounds in 1875 to 1.14 at this time.

Traffic unity has done yet more to lessen geographical dissensions, which intensifies personal discriminations, for if all merchants in a district are treated fairly, as compared with those in another section, personal wrongs in both localities will more rapidly disappear. By bringing together in a joint executive committee railways representing all sections and interests, mutual concessions have taken the place of arbitrary and sectional views, wrongs have been admitted and rectified, unequal practices made uniform, and in no other way could so many good results have been achieved.

The co-operative system of traffic distribution recog

nizes the competition of carriers to the same points, because it has removed no stimulus that each endeavors to secure its full competitive share of tonnage at equal rates. If they do not do so their percentages may be reduced. This, however, induces every company to secure business by the best method and facilities rather than by paying drawbacks; and if the money wasted in needless rebates in the last ten years had been invested in judicious betterments and improvements, as the legitimate right arms of true competition, the public would have had great and permanent benefits instead of great, if transient, evils. The construction of new roads and the new control of old roads are also recognized as factors entitling the controlling line to the increased traffic they bring it, and reducing at the same time in proper proportions the tonnage of the older lines from which they divert traffic.

This organization has stopped discriminations by railways against railways, curbed the stronger, protected and encouraged the weaker lines, and thus retarded the growth of railway and personal monopoly.

These organizations have been far from perfect, and there has been much bad faith under them, that would, however, have been worse without them; but they have cured many ills, and the more nearly they can be made like this illustration of unity the more surely they will correct those wrongs that yet exist within and despite their better intents.

My next point is, that the joint executive organization does not prevent *proper* individual independence. More than half its members represent railways that do not divide any class of business; they have no contracts with the others which do, and they can leave the organization on notice. They are as free now as when joint railway affairs were considered by old methods, to cut rates, discriminate, and disorganize if they so select, and some of them unfortunately still do it, as witness the present unprofitable Eastward through rates.

In defending the co-operative railway unity which is thus beginning to command the approval of the public, I do not ask that the protection of its great transportation interests be left entirely to that agency. There will always be honorable railway officers who demand the consideration of the public interest from high motives, and others who perhaps take the more sordid view, that in protecting public interests they add to their own, but even both considerations, added to the powerful water and trade limitations hereinafter cited, may not act as adequately and continuously as they should.

Conceding, therefore, Lord Coke's apothegm that "railways are affected with a public interest," and to Judge Nelson, that they "have public duties to perform," the public is entitled to ask:

1. That all railway freight rates be reasonable.
2. That they shall not be unduly discriminating or preferential as between persons or localities for substantially like transactions.
3. That proper freight tariffs, together with the defensible and just commercial concessions from them, be given such publicity as to prevent the unjust abuse of the just principle.
4. That all attempts to evade any of the foregoing public requirements, by concealed or other drawbacks, or preferences, should be legally prevented.

All just commercial railway grievances fall within some of those admitted boundaries.

CAUSES PREVENTING EXTORTION BY "POOLS."

The logical inquirer into this problem often asks: "What is to prevent you from strengthening and enlarging your combination so that unreasonable rates will be enforced?"

To this admittedly fair question I answer:

It has not yet been done, but, on the contrary, many prominent reductions in rates have been shown. There is less general business to carry now than in 1882, and two new trunk railways to carry it, the Lackawanna and West Shore. If the Trunk Line Commission were an extorting monster, and no reasonable facts or considerations limited its charges, it would advance them so that each of the old lines would get as much money from its reduced tonnage as it received before the new comers depleted its larger traffic, but no advance in rates has been made from that cause.

The restraining force of public opinion, and respect for the common and statute law, operate upon railway traffic management with more power than is popularly known or believed.

The third point conceded was proper publicity of tariffs and changes in them, as well as the scales of allow-

ances, if any, made to manufacturers of crude materials, intended to reappear in finished forms, such as lumber into furniture, ores into castings and forgings, cotton into fabrics, grain into flour, etc.

Such concessions are world-wide and defensible, are calculated to develop industry and stimulate thrift, and traffic unity would make them reasonable, public and uniform.

I cordially sustain the fourth point, that concealed drawbacks and allowances creating inter-state and discriminating results should be forbidden by law, except that such prohibition should not interdict defensible commercial allowances.

To illustrate: The Government refunds internal revenue taxes first paid on whiskey exported by a rebate defensible on national grounds. I similarly maintain not only the equity but the national need of a fair export railway drawback from fair rates if this country could not otherwise command a proper share of the grain markets of England against the rivalry of India or Odessa. If a fixed rate on grain from Chicago be thirty cents per 100 pounds to consumers in New York City, and that rate is reasonable per se, it is no undue discrimination if a fair part of that charge be necessarily refunded upon proof of export to London. The one rate pushes American cereals into markets they could not otherwise maintain, and the other, although higher, gives our own people the cheapest breadstuffs in the world. That is defensible railway and public wisdom, if the allowances are uniform and have publicity with other rates and regulations. When the Government waives its charges to aid the export of whiskey, although foreigners may, perhaps, for that reason, drink it cheaper than we can, it is not called national discrimination, but protection or encouragement.

Beyond such just allowances on public and fair scales, I believe that all other *inter-state drawbacks or concealments should be stopped by law*. Next to such law, traffic federations can and will prescribe just, uniform, and universal rules, and due publicity; and the railway officers, who are intelligently and fairly endeavoring to perfect traffic unity in that spirit, should be held as reformers stopping public abuses, and not as malefactors inaugurating them; but both federal and state law should aid them, as it aids various societies for the prevention or suppression of vice and crime.

I readvocate what I said at Washington in March, 1882, more heartily than it was first uttered:

"I have no hesitation in recording the conviction that, if the Government of the United States would give legal effect, like England, to the association of American railways now organized under the title of the Joint Executive Committee, or to their Board of Arbitration, by which it might prosecute or be prosecuted and defend, and thus give the national sanction and a semi-public character to the federation of the companies, the unity of their management, and the uniformity of their rates; and then further enact the appointment, which I shall urge later on, of a National Railway Commission to co-operate with and not oppose this recognized committee, then the unreasonable public clamor which now seeks the enactment of hostile railway legislation unknown to the world would not only cease but be entirely harmonized in the unquestioned public satisfaction that would follow."

If this view were conceded, the national transportation interest would be reduced to a homogeneous and legalized whole, performing with equity the carrying needs of a vast and growing people and commerce.

Railway agreements relating to inter-state traffic should therefore be filed with a National Railway Commission and the United States District Attorneys, and the latter should be required to take action in the United States courts upon verified complaints of their violation to an extent requisite to enforce uniform reasonable charges, both against each railway and shippers that sought or knowingly accepted preferential inter-state rates. Such agreements would then be so cautiously, conservatively, and impartially drawn, and the public would be so well protected within and without them, that most of the railway ills of the nation would disappear like the "fabric of a vision" under such legal supervision and public scrutiny. Under railway contracts so legalized, while publicly watched and guarded, honest railways or forwarders could cite others to legally establish like honesty of purpose and action, and unjust practices, although but few cases would ever be permitted to reach that issue. When, however, courts enforce other contracts and the constitution guarantees their inviolability, why should

railway agreements in the interest of public equality and reasonableness be exceptions merely because they provide at the same time for railway equality and reasonableness.

If such national sanction as to inter-state agreements could be supplemented by the like confirmation by states as to competition within their limits, there is no question whatever that the just mean of public and railway protection would be reached, and remain assured.

General Items.

The bill to abolish bucket-shops has been passed by the Iowa senate, the measure being fought by only three senators.

A warehouse at Chico, Cal., was recently turned into a trap for wild ducks, 200 of them being caught by leaving the door open for them to go inside for grain.

For elevating corn and cobs together from a sheller to the cleaner, it has been found that about forty revolutions per minute for the upper pulley enables the elevator to discharge very freely without throwing back.—*Modern Miller*.

The Commissioner of Agriculture, in a recent report states that in regions where mixed farming and regenerative methods are used the yield of wheat is increasing, while in the sections of consecutive crops of spring wheat there is a decrease. Rest and repair are required by the soil as well as animals.

Notwithstanding low prices in England, Australian farmers are shipping grain in large quantities. In January from Melbourne, Adelaide, Sydney, and Queensland they shipped 420,000 bushels of wheat and 800 tons of flour. For corresponding period last year 40,000 bushels of wheat only were forwarded, though prices were then higher. This increase is significant.

California wheat-growers are reckoning largely upon the completion of the Panama Canal, since it will shorten the long voyage which California wheat now has to take to reach a market. They believe that on the day the canal is opened California can defy the competition of India and Australia. The opening of that canal will add to the value of every acre of wheat land in the state.

Receipts of grain at Baltimore, as shown by the Corn & Flour Exchange books for the month of March, 1884, and compared with same month 1883, show a decrease in wheat of 183,546 bushels, and in corn 841,610 bushels. Oats, barley and rye each show some increase, doubtless in part to be attributed to the Camden elevator, which is so well adapted for the promotion of handling these products required for local distribution.—*Baltimore Journal of Commerce*.

Some interesting and extraordinary data have just been compiled respecting the Mississippi. It appears that it boasts no fewer than tributary streams with a total length of navigation of 16,571 miles, or about two-thirds of the distance round the world. Even this, however, represents but a small amount of the navigation which will follow when the Federal Government has made the contemplated improvement in the Upper Mississippi, in the Minnesota, Wisconsin, and other rivers, in which it is now engaged. But while the Mississippi has 16,571 miles navigable to steamboats, it has 20,221 miles navigable to barges. This navigation is divided between 22 states and territories.

The city that builds its trade on one interest alone will in the end find its prosperity departed, however bright its prospects may have appeared. Baltimore, for example, a few years ago had an enormous grain trade, and all the energies of her merchants seemed centered in the development of that. For a while all went well. Millions of bushels of grain poured into her elevators for foreign shipment, and hundreds of ocean vessels crowded her harbor, seeking cargoes of wheat and corn. There came a time, however, when the United States had comparatively little grain to ship, followed by a season when Europe did not want what we did have. And to-day Baltimore's shipping merchants find comparatively little to do, and the vessels that now enter her harbor can be counted by the dozen, where formerly there were hundreds. A wise diversity of foreign exports and imports would have prevented such a state of affairs.—*Baltimore Manufacturers' Record*.

The best and cheapest Car Starter is sold by Borden, Selleck & Co., Chicago, Ill. With it one man can move a loaded car.

THE SURREY DOCK GRANARIES, LONDON.

Into the Surrey Commercial Docks, which appear to take in somewhere about a fourth of the whole of the grain coming into the Thames, the grain vessels entered in 1883 have had an aggregate tonnage of 242,000 tons register, as compared with 216,000 in 1882 and 168,000 in 1881. A registered ton takes about $8\frac{1}{2}$ quarters of corn, so that into this one dock alone last year something like 2,057,000 quarters must have been received, as compared with 1,831,000 quarters in 1882, and 1,428,000 in 1881. So rapid has become the increase in the volume of corn poured into the Surrey Docks, that although the company had granaries of vast extent this time last year, they have had to add to their accommodation an enormous corrugated iron structure, which, together with hydraulic cranes and grain elevators, is just now in course of completion, and is already full of grain, great quantities of which are also lying in lighters and other craft in the docks.

One of these warehouses may almost be said to be a machine in itself, to so great an extent is the management of the corn confided to mechanism, and very curious mechanism some of it is. The "golden grain" which very possibly may have been sown, reaped, bound into sheaves, and threshed by machinery, is brought alongside the dock quay, and again taken in hand by machines which lift it from the hold of the vessel, pour it into the warehouse, weigh it into so many sackfuls, and then run off with it to any part of any one of the floors of the extensive granaries—all without its ever being touched by human hands. The raising the corn from the hold of the vessel is one that has been considerably expedited of late. It used to be done by dropping a great iron bucket down into the pile and shoveling in the corn by large wooden spades. The crane would then haul it up, whirl it round over a hopper, and the bucket would then be tipped upside down. That is an old-fashioned plan now, and in the Surrey Docks has been substituted by the "grab," which, as we recently stated in these columns, has lately been raising the mud out of the caissons at the new Blackfriars Bridge, and which has not only been employed to some extent in making excavations for the new docks at Tilbury, but appears to have afforded Irish politicians a term which has been very effectively employed in the course of their land agitation. It was shown in action at the Fisheries Exhibition. As used at the granaries, the "grab" dives down into the loose corn like a huge pair of jaws wide open. These jaws close as they are drawn up again, bringing up a mouthful of somewhere about three-quarters of a ton of grain; and so rapid is the new weighing and distributing machinery just completing in the company's iron building, that in order to keep it fully employed this grab must dive down and discharge into the hopper one such mouthful every minute. At the new granary there are indeed two "elevators," each of which will receive and dispose of such a charge from the crane about once a minute.

At the older warehouses, of which we had better, perhaps, speak first, there are no "elevators," in the ordinary sense of the word. The corn is hauled up from the hold of the vessel and dropped into hoppers, of which there are two or three that may be moved along a sort of balcony railway outside the first floor of the building to any position at which a vessel may be lying, the hydraulic cranes with the "grabs" being also movable along rails laid on the quay. The corn is dropped into the hoppers, and from these pours through a spout into the granary by one of a row of apertures provided in the front of the building. It has now first to be weighed, and then from the weighing machine to be distributed throughout the building, and it is the machinery for effecting this which constitutes the most curious feature of these splendid warehouses. The weighing apparatus is just inside the front wall of the building, and in the middle, whereas the corn may perhaps be rushing in from the hoppers at the far end. It is conveyed along through half the length of the granary—which is some 600 feet long—not by a spout, as might perhaps be expected, but on the top of an endless India rubber strap about fourteen inches wide, which is kept revolving as tight and flat as possible on drums rotated by the hydraulic power with which the premises seem to be permeated. The grain pours down on to this strap, the edges of which, for a few inches from the drum, are slightly curved up, so as to throw the stream fairly into the middle, and then rides away toward the weighing machine as swiftly and safely as though it were running through a steeply inclined spout. The conveyance of things by endless bands is a device adopted in many businesses. It has, we believe, been resorted to for the conveyance of newly-made bricks from one part of a brick-field to another. Something very similar constitutes a part of the best biscuit-making machinery, and the same thing in principle has been found useful at the central telegraph office in St. Martin's-le-Grand for passing written messages from one part of the extensive floor to another over the heads of the operators. At Somerset House, too, endless bands are found useful in conveying stamped documents and other things of the kind from one room to another. The idea itself, therefore, is neither unique nor very novel; but the application is certainly very curious, because it looks as though the stream of grain could not possibly be conveyed for a distance of 200 or 300 feet on the surface of a narrow band without most of it being spilled in all directions. In these warehouses, however, it is running about all the floors, and the remarkable thing is, that not only will it ride safely when the straps are level, but here and there it will actually run up a considerable incline, and on reaching the end of

its journey shoots off just like a strong jet of water. The effectiveness of this device is remarkable. A single revolving band of fourteen inches in width will convey sixty tons of grain an hour, and a new one now just completing in the iron granary already alluded to will carry no less than eighty tons an hour.

By one of these "travelers" the stream of corn from the ship is hurried away toward the weighing machine, and here it is spurted off into another hopper, from which it runs down into a canvas receptacle which stands upon a scale on the floor below. Just a sack weight is allowed to run down, and then the man in charge of the scale shuts off the stream from above, opens by a single movement of his hand the bottom of the canvas receptacle and lets the sack of grain fall loose into a kind of glazed well. It has been weighed and recorded, and now must be started on its journey toward whatever part of the huge granary may have been allotted to the particular cargo of which it forms a part. From the well beneath the weighing machine, it is taken possession of by another revolving band, this one being furnished, however, with a line of tin receptacles like the buckets of a dredging machine. By these it is scooped up and carried to the summit of the granary and poured out upon another "traveler," which runs away with it to the center of the building, just under the roof, where the stream of corn, meeting with an obstruction, is shot into a third traveler, which hurries it off along the length of the granary until it reaches the part of the upper floor on which it is to be deposited, and where another obstruction or "thrower-off," as it is called, will arrest its further progress and pour it into the floor. It may be, however, destined for one of the lower floors, in which case it will be diverted into a perpendicular wooden spout lined with sheet iron, down which it will rattle to the middle of the lower floor, where it will be made to shoot out north, south, east, or west, or to any intermediate point of the compass by an ingenious revolving spout. Thus by first raising it to the summit of the building, then across the middle, then along the length of the right or left, and now finally downward by the fixed and revolving spouts, a constant stream of corn may be kept flowing from the weighing machine to any spot on the spacious floors here. This rapid stream of corn of course involves a good deal of friction, and hence the wooden chutes have to be lined with sheet-iron or they rapidly wear away, while the wearing away of the corn grains is manifested by the white dust that pervades the whole place. In the older portion of their premises the company have accommodation for 200,000 quarters of grain, and the two new floors of the recent iron erection, which is 500 feet long by 60 feet wide, will take in another 17,000 quarters.

This new building has but one floor above the ground, and arrangements are here somewhat different. Instead of the weighing and the elevation of the corn to the summit being effected within the building, these two operations are carried on by two "elevators"—wooden structures some 64 or 65 feet high, which are arranged to travel along a tramway between the water's edge and the building. The powerful cranes raise the grain from the ship as at the other warehouses, but discharge it into a hopper inside these elevators; here it is weighed, carried up as in the manner already described to an elevation of nearly fifty feet, and then shot down into the granary through a telescopic spout into the traveler, which, as has already been said, will be 22 inches wide, instead of 14, as in the older building, and which will deposit in any part of the two floors 80 tons of grain an hour.—*London Daily News.*

GRAIN TRANSPORTATION ON THE LAKES.

At present it is said at least four-fifths of the grain shipped to Montreal from Kingston, Ont., is transhipped at that point to river barges; the reason being that the present depth of water in the Welland Canal is not sufficient for barges of a profitable capacity for lake transportation, and small schooners are used mainly. The elevator and handling charges at that point are low, and the expenses of building and running the river craft are much lower than those on the lake. The shipments by propellers are limited to grain where the element of shorter time offsets the cheaper rates. The competition in the lake transportation of grain lies between propellers, schooners, and barges, and of late steam barges. The difference of expense in the erection and managing of the first, as compared with the others, is great, while the average freight rates for grain on propellers does not exceed by more than one cent per bushel those by schooner or barge. The former have an average capacity of only 14,000 bushels, and calculating interest on investment, the wages of a comparative large number of hands, and all their expenses, their running cost for the season is about \$100 per day. A schooner of 20,000-bushels capacity costs, say \$20,000, or \$1 per bushel of their capacity, against \$38,000 for a propeller. The total expense of running is about \$50 per day. They require twice the time for a trip that propellers do, but take over 20,000 bushels of grain through the canal, against only 14,000 by the former. When the prospective depth of the new canal shall have been attained, barges of a capacity equal to those now used in the Buffalo trade will be built, and pass through the St. Lawrence system, through which schooners of the same tonnage cannot pass. Barges for lake navigation can be built at a cost of 75 cents per bushel of capacity, and managed with fewer hands and less expense than schooners, and when a tug boat or steam barge supplies towage, they surpass the latter in speed. Steam barges rival common barges, as

their offsets to lost capacity by engine room and expense, on the charges for towage, and the increase of speed. These in the future will probably take the main portion of the transportation of grain by the lakes.

AGRICULTURE AND THE PROTECTIVE SYSTEM.

Mr. William Walter Phelps, of New Jersey, delivered an address before the Board of Agriculture of that state a few days ago, which is of interest as containing a presentation of the claims of the protective system on the American agriculturist. Heretofore, we need scarcely say, the view has been widely held that the farming interest of the country has been very little indebted to protection, and that in fact there is a necessary conflict between the principle of protection and the interests of the farmers of the United States. Mr. Phelps, however, essays to show that this view is a mistaken one, and that the agricultural interest has derived important advantages from the protective system. The encouragement which this system gives to manufactures and other branches of home industry tends to increase the number of those who leave the ranks of agriculture and engage in other pursuits, and this Mr. Phelps believes to be a distinct gain for the farmers. In support of his view he adduces figures to prove that the value of the land in the United States rises in proportion as the percentage of agricultural workers to the whole population decreases. This, it will be seen, is an argument to the special interest of the farmers as a class, not one based upon considerations of general interest.

Mr. Phelps went on to say that while, at the beginning at least, articles of foreign manufacture may be bought at a less price than articles of native manufacture, and the foreign manufacture is willing to take corn, cotton, and wool in exchange, yet "he cannot take the egg, the chicken, the vegetable, the hay or the potatoes, nor can he aid to build schools and churches, and to pay the taxes." Besides, influences are at work to cheapen the cost of articles of domestic manufacture so as to reduce the prices of these to a level with, or even below, those of the foreign articles. At this point Mr. Phelps assures us that "every manufactured article is cheaper to-day in the United States than it was thirty years ago," when 90 per cent. were made abroad, as against less than 10 per cent. at present. But it is not alone indirectly that the farmer is benefited by the protective tariff. Mr. Phelps gravely calls attention to the impartiality of the system, and its care for the agricultural interest, as shown in its protection of the American wheat-grower by a duty of 20 cents per bushel, and so on through a variety of other agricultural products. From this it will be seen that the advocates of protection have not made, and do not intend to make, necessity the sole test for determining as to the imposition of duties in a particular case, but have been and still are willing to make concessions to the agriculturists for the sake of principle.

Mr. Phelps concluded his address with an examination of the relative importance of the home and foreign markets to the American farmer. He said that in our home market we are now selling 92 per cent. of our whole production, that the home market is the only place where perishable products can be sold, that the foreign market is limited and can be supplied elsewhere, and that the demand is uncertain, and that for these and other reasons the foreign market is worth little to the farmer, less even than to the manufacturer. At the same time, he said, protection does not destroy foreign trade; it only looks first to the interests of home trade. Foreign markets are needed only to take our surplus. Our surplus in agriculture is only eight per cent. of our total production. That being so "It does not stand to reason that we should care so much for that market as for the market that consumes 92 per cent."—*Bradstreet's.*

INDIAN WHEAT.

In a single valley of India there are now produced about 3,000 bushels of wheat per day, and the same ground could easily be made to produce 13,000 bushels. It is estimated that there is in that country alone an area of 27,000 square miles devoted to wheat cultivation. Here then is a wheat field of 17,000,000 acres for England to draw from, and it is no longer a matter of wonder that the Liverpool grain markets have been so easy and their storehouses so full ever since the close of the last harvest. Concerning the quality of the wheat raised in India, it has been found by experiment that a given amount of it will make more flour and bread than American or Russian wheat, but that it possesses an aromatic flavor which requires the admixture of about one-third of some other kind of wheat to produce the best results in food. All that England has to do now is to facilitate the building of railroads in that country and she will have always in her power an inexhaustible granary. At present there are only about 10,000 miles of railway track in operation in India, whereas there should be, and will be in the future, ten times that extent. Add to these facts the low cost of labor in that country, and there is nothing left to consider but the price of ocean freights between India ports and England, which is said to compare favorably with that between New York and Liverpool, taking the respective distances into account. And all this large amount of wheat is raised in India by the use of very imperfect tools and means; hence it can easily be seen what might be done by the same amount of labor, if improved implements of agriculture and extended facilities of transportation should be ever added to the natural productiveness of the soil.—*Chicago Journal.*

Elevator and Grain News.

A grain elevator is to be built at Knoxville, Tenn. The elevator at Ojata, Dak., is about to be rebuilt. I. W. Dodge, grain dealer at Beverly, Mass., has failed. Carberry, Manitoba, will have a large elevator this season.

A 30,000 bushel grain elevator is to be erected in Trenton, Ky.

J. T. Runcie & Co., grain dealers at Fort Branch, Ind., have failed.

E. Dale & Co. succeed E. Dale, grain dealer at Coon Rapids, Iowa.

Work is progressing rapidly on the new elevator at Vermilion, Minn.

A. C. Keever, grain commission merchant of Kansas City, Mo., has failed.

D. D. McCall, grain dealer of Caledonia, N. Y., has made an assignment.

Peoria, Ill., received 2,400,520 bushels of grain during the month of February.

J. Collin Vincent & Co., of Baltimore, Md., grain speculators, have suspended.

Mr. Grosh, of Niantic, Ill., is building an addition to his elevator at that place.

The Edgerton Grain and Milling Co. succeed Larrick & Sons at Edgerton, Kan.

F. Machaman, grain dealer at Waynesburg, Ohio, has sold out to T. F. Williams.

D. M. Hough & Co., grain commission merchants of Detroit, Mich., have failed.

Barton & Collins, grain dealers at Kenesaw, Neb., are succeeded by E. G. Collins.

B. Saling & Co., grain dealers at Elkhorn Station, Neb., have dissolved partnership.

Fitch & Phillips, grain commission merchants of this city, have suspended business.

Carter, Campbell & Co., grain dealers, Charleston, Tenn., have dissolved partnership.

The St. Louis & Marissa Grain Elevator Company, of St. Louis, Mo., has been incorporated.

W. H. Story & Co. succeed William H. Story, grain commission merchant of New York City.

Potter & Nash, grain dealers of Greenfield, Mass., have dissolved, W. N. Potter & Sons continuing.

The annual shipments of wheat from Morenci, Mich., have averaged 100,000 bushels for three years.

Lockhart & Sanders, dealers in hay, grain, etc., at Lodi, Cal., have dissolved, and M. Sanders continues.

Friend & McFall, grain dealers of Tipton, Ind., have dissolved partnership. K. M. Friend succeeds.

The Lake Superior Elevator Company, of Duluth, Minn., has increased its capital stock to \$600,000.

The two large elevators being built at Port Huron, Mich., will be completed in time for the next crop.

The Northwestern Elevator, at Brandon, Minn., is closed for a time on account of water in the elevator pit.

D. J. Fair succeeds Edwards Bros. & Fair in the grain business at Sterling, Kan., the old firm having been dissolved.

The elevator of Bariteau & Welch, at Maitland, Mo., is now running, having been shut down for several months.

The new elevator of the Norfolk & Western Co., at Lambert's Point, Va., will have a capacity of 300,000 bushels.

H. Hobart Herrick has been admitted to the firm of J. H. Herrick & Co., grain commission merchants of New York City.

Robert Lindblom & Co., grain and produce commission merchants of Chicago, Ill., have dissolved. Nelson Vankirk succeeds.

Mr. Warren Armington, formerly of Armington, Ill., has leased a property at Natrona, Ill., and will handle grain and lumber.

A fist fight over a deal recently occurred in the Chamber of Commerce, Cincinnati, Ohio, between G. Y. Roots and B. W. Wasson.

The Harrison Conveyor Co. of Chicago, Ill., have shipped to J. T. Spangler, of Walnut, Iowa, conveyors for his new elevator.

S. W. Little, of Lincoln, Neb., has ordered of the Harrison Conveyor Co., Chicago, conveyors for handling grain at Seward, Neb.

A 40,000 bushel elevator will be built in connection with the new mill of the Minto Roller Mill and Elevator Co., at Minto, Dak.

The Harrison Conveyor Co., of this city, have shipped to James Bruce, Timaru, New Zealand, conveyor for handling grain and sawdust.

Henry E. Truebach has retired from the firm of M. Waterman & Co., grain dealers and commission merchants at San Francisco, Cal.

□ The new 500,000-bushel elevator of the Duluth & Northwestern Elevator Co. at Duluth, Minn., commenced early in December, was expected to be ready for the reception of wheat early in April. It is located on East

Michigan street near Elevator "A," and the cost is estimated at \$200,000.

County commissioner Augustus C. Knopf has been a loser on the Chicago Board of Trade recently to the amount of \$35,000 or \$40,000, and has failed.

The Harrison Conveyor Co. of Chicago, Ill., are furnishing Keeler & Adams elevators and conveyors complete for their new warehouse.

The Valley Grain Elevator Co., of St. Clair county, Ill., with capital stock of \$260,000, obtained a license to open books of subscription on April 10.

The contracts have been let for the material for the new elevators at Duluth, Minn. These buildings will be lighted by the Edison electric light.

The Toledo & Michigan Elevator Co., at Toledo, O., has filed articles of incorporation with the Secretary of State. The capital stock is \$250,000.

The Harrison Conveyor Co. of Chicago, Ill., have shipped to Spangenberg, Pendleton & Co., of Warren, Ohio, conveyors for handling sawdust.

The Clyde Mill Co., of Clyde, Kan., have recently put in Harrison Conveyors in their elevator, for handling ear corn and small grain in same elevator.

Druly & Jonsson's oatmeal mill at Joliet, Ill., has been placed in the hands of a receiver, the Hon. A. O. Marshall, who will try to lease the property.

The Harrison Conveyor Co. of Chicago, Ill., have an order for conveyors from B. F. Gump of this city, being the third coming from him for the same parties.

The Harrison Conveyor Co., of this city, have recently furnished W. E. Johnson & Co., coal dealers, this city, conveyors for elevating and screening hard coal.

The new elevator at Port Arthur, Manitoba, will be ready for use shortly. The warehouses erected temporarily are filled with grain to their utmost capacity.

The Harrison Conveyor Co. of Chicago, Ill., have an order from the Union Mill Co. of Waterloo, Iowa, for conveyors to handle ear corn, to replace a belt drag.

Since June last 166,000 bushels of wheat have been bought at Granger, St. Joseph Co., Ind., most of which was raised within a radius of ten miles of that place.

The partnership heretofore existing between Geo. K. McGaw & Emmart, grain commission merchants of Baltimore, Md., has been dissolved, Dugdale & Emmart succeeding.

The Harrison Conveyor Co. of Chicago, Ill., have contracted with Marsh Bros. for 350 feet of conveyor to go into their elevator at Kansas City, Mo., to be built on the "Chase" plan.

The Thornton Elevator, at Benson, Minn., is to be taken down and made into two elevators at points in Dakota. A large amount of grain has passed through it the last ten years.

The Harrison Conveyor Co., of this city, have recently shipped to the Conestoga Dry Paint and Color Works conveyors for handling phosphates, etc., in their works at Lancaster, Pa.

The Webster & Comstock Mfg. Co., of this city, recently received an order for five of the Coker Patent Steam Power Grain Shovels for the transfer elevator at Englewood, Ill.

The Western Brick and Tile Manufacturing Co., at Galewood, Ill., are using with success 300 feet of Harrison Conveyor, made in this city, for elevating and distributing clay to their presses.

The Duluth and Western Elevator Co., of Duluth, Minn., have placed an order with the Webster & Comstock Mfg. Co., of Chicago, Ill., for one of their Coker Power Shovels for unloading grain from cars.

During the past winter the grain dealers of Clay Co., Minn., have suffered so much from wheat thieves that the commissioners of the county have offered a reward of \$500 for the arrest and conviction of the thieves.

The Harrison Conveyor Co., Chicago, have recently furnished Hayes & Callahan, of this city, conveyors for elevating sand and gravel to screens, an entirely new process for handling and screening gravel and sand.

Davis & Taylor, grain and flour merchants, Boston, Mass., have suspended. The recent death of one of the partners is given as the reason. The liabilities were estimated at over half a million and the assets at \$250,000.

The agent of the Northwestern Elevator Co., at Minto, Dak., Dale by name, has disappeared, leaving a shortage of \$4,000. It is thought a further deficiency will be discovered when the wheat in the elevators has been delivered.

The Lake Superior Elevator Co., of Duluth, Minn., have increased their capacity 2,000,000 bushels. The Webster & Comstock Mfg. Co., of Chicago, Ill., have the contract for buckets, of which two car-loads will be required.

Capt. Alex. Griggs, the owner of the steamer Selkirk, has purchased the steamers Pluck and Alsop and five barges, with all the wheat warehouses on the Red River, from Alsop Bros. and other New York owners, for \$46,250.

"A farmer living near Groton, Dak.," says the *Advocate*, "who stored 600 bushels of wheat at the elevator, wants to get out his bread and seed but cannot draw out his wheat without paying ninety cents a bushel for it. The storage tickets have a clause printed therein giving the elevator the option of delivering the wheat or paying market price for it. Of course the elevator chooses the latter, and makes twenty-four cents per bushel by selling

the farmer back his own wheat for seed. Farmers who get their wisdom-teeth cut this year will probably build granaries and store their crop at home or sell it immediately after the threshing."

Two new elevators will shortly be built at Rossville, Ill., one by Hugh Shields and the other by John Stephenson, a farmer from near Geetingsville. Both men have purchased the ground, and are making preparations for building.

The partnership heretofore existing under the firm name of C. T. & F. W. Lancaster, grain dealers of Oil City, Pa., has been dissolved. A new co-partnership has been formed between C. T. Lancaster and Chas. A. Green, under the style of C. T. Lancaster & Co.

Fish & Blum, grain commission merchants of Martinez, Cal., have dissolved partnership, and are succeeded by S. Blum & Co. Also the firm of Fish, Blum & Gervin, in the same business at San Francisco, Cal., have dissolved, Blum, Gervin & Baldwin continuing.

The Union Improvement Elevator Co., owners of Elevator "A," Duluth, Minn., are making arrangements for another large elevator, with a capacity of 1,100,000 bushels, at Rice's Point. The work has been commenced, and when complete it will cost about \$400,000. Some \$10,000 to \$15,000 are also to be expended in improving Elevators "A," "B" and "C" of that city.

Parties who have been investigating the stocks of oats on hand in the sections of country which make a specialty of this grain, report that in Dubuque, Ia., there are 50,000 bushels in store. On the Iowa branch of the Illinois Central road from Dubuque to Sioux City, including the branch line to Minnesota, there are 300,000 bushels, and in Galena, 250,000; in all, 600,000 bushels of oats.

The Milling Co., of Edgerton, Kan., have awarded the contract for changing their mill to the gradual reduction system to H. C. Smith & Son, of Lawrence, Kan., using the Case Break Rolls, scalpers, centrifugals, purifiers, etc. Also the contract for building, as an addition to their mill, a 15,000 bushel elevator, and fitting it up with Barnard & Leas' Corn Shellers, Cleaners, and Wheat Separators.

The Lake Superior Elevator Co. has a large force of men at work preparing the foundations for their third elevator at Duluth, Minn., which is to be erected west of Elevator "C." The new house will have a capacity of 1,100,000 bushels of wheat, and when completed will cost \$400,000; it will be one of the largest and best elevators on the chain of lakes, and be supplied with all the modern improvements.

An impression being prevalent that grain and flour could not be shipped beyond St. Paul and Minneapolis, the Manitoba Railroad has issued a circular calling attention to the fact that cars can be loaded for Chicago, Milwaukee, and all points east and south of St. Paul and Minneapolis. These cars should be way billed to Minnesota Transfer, where delivery can be made to connecting lines without extra charge.

Tulare county, says the *Tulare, Cal., Register*, will this year make the banner wheat county look to her laurels. From reliable estimates obtained from residents of the several localities we calculate the acreage of grain in the county at nearly, if not quite, 270,000 acres. Four-fifths of this amount is in wheat, and promises better now than any crop ever harvested. Thousands of acres will be seeded to Egyptian corn during the next two months. The amount of land seeded to alfalfa cannot be estimated at the present time, but will, no doubt, amount to many sections. Our county numbered her alfalfa fields by thousands of acres last year, and the area of newly-sown land must be almost as large as the entire acreage last year. Never before in the history of the county has the same activity in agricultural matters been manifest. With no serious drawback from the present time until harvest, even the residents of Tulare county will be surprised at what they have accomplished.

The farmers' and inspectors' meeting at Redfield, Dak., on April 8, was attended by about 150 members, in spite of its being seed time, some coming from near Millett, a distance of twelve miles. There was very little complaint made by Redfield farmers, as a competition exists there on the Northwestern. The members from Millett were very bitter; they stated that at the beginning of the season five cars of wheat had been shipped from Millett to commission men at Minneapolis, which brought from eight to ten cents more per bushel than the elevators paid. The agents of the latter reported the fact and no cars could afterward be had. Demands were made for transit cars when needed, and a uniform system of grading, with threats of hostile legislation. Mr. Bird, general freight agent, promised that they should have the cars, and made a conciliatory talk. On his suggestion a committee was appointed to examine the transit system at Milwaukee. Pratt, who owns an elevator line on the road, was severely criticised, but was not present to reply.

Among some of the recent orders recently received by Messrs. Edw. P. Allis & Co., of the Reliance Works, Milwaukee, Wis., for their celebrated Reynolds-Corliss Engines, are the following: Monmouth Mill Co., Monmouth, Ill., 12x36, with heater, pumps and connections, etc.; Sioux Falls Light & Power Co., Sioux Falls, D. T., 12x36, with boiler, heater, pumps and connections, etc.; Haxton Steam Heating Co., Kewanee, Ill., 22x48 engine complete; Wardell & Hinckley, Chicago, Ill., 14x36 engine complete; Geo. W. Woodruff, Columbus, Ga., 20x48 engine complete; R. M. Todd & Co., Rock Falls, Iowa, 14x36, with boiler, heater, pumps, etc.; Menominee Mining Co., Milwaukee, Wis., 18x42 engine complete; L. Wolf

Mfg. Co., Chicago, through Wardell & Hinckley, 18x42 engine complete; Nicollet House, Minneapolis, Minn., 16x42 engine complete, for electric light plant. The large pumping engines for the city of Allegheny, Pa., are completed and being set up. They are a fine specimen of pumping engines, and while set up in the Milwaukee shops were viewed by many interested in such work. Messrs. Allis & Co. have secured the contract for the pumping engines and machinery for the city of Decatur, Ill., and will furnish a pair of Reynolds Improved Pumping Engines, with cylinders 20x36, all complete.

WHEAT IN MEXICO.

The opening up of the Great Mexican Central Railroad calls the attention of grain producers and dealers to the alleged facts as to the present and future capacity of that country for surplus wheat production. A writer, who claims to make very conservative statements, says that the special wheat growing tract, extending from Pueblo to Colima, a distance of about 500 miles east and west, and from Southern Michoacan to Zacatecas, about 400 miles north and south, contains about 52,000 square miles, one-third of which, it is believed, is well adapted to wheat culture. Three crops are now gathered under Mexican agriculture in two years—one of wheat and two of corn. The average yield of wheat is 20 bushels per acre, and of corn varies from 30 to 50 bushels, according to irrigation. At the Centennial Exposition, Mexico took the first prize in the comparison of the wheats of the world. The methods of cultivation and handling are extremely primitive and awkward in all respects. Besides the tract above mentioned, the writer says, there is sufficient outlying grain land to supply all the wants of the 10,000,000 inhabitants of Mexico. They are at present fed on grain raised where they live, having no organized means of transportation. Were these lands accessible and properly cultivated, they would give an average annual production of 110,000,000 bushels of wheat and 440,000,000 of corn, all of which would be available for foreign markets. The special wheat lands referred to compose less than one-fourteenth of the total acreage.

The lands of Mexico are generally in private hands, held in vast tracts, and employ the very cheapest labor. By the end of the present year there will be two trunk lines of railway from the capital to the States, with branch lines to the various Gulf ports. These great estates, already cleared, under these incentives will be rapidly brought under cultivation, and being everywhere comparatively nearer to the seaboard than the United States wheat-growers, will hold a great advantage in this competition in the world's markets. The one great drawback to Mexican progress is the heavy imposts placed by the state on all products, amounting to one per cent. on nearly everything raised or brought into the country.

GRAIN MIXING AT NEW YORK.

At a recent meeting of the Committee on Grain Mixing, of the New York Produce Exchange, to consider its report, Hon. Theodore L. Husted, a prominent grain dealer and member of the state Legislature, offered an amendment in effect as follows: All wheat to be graded shall be inspected before being elevated, and the inspector-in-chief, and all inspectors under his direction, are forbidden to assist, advise, or superintend the mixing together of different qualities of wheat, or to grade any wheat while in process of mixing, either afloat or in store.

Mr. Husted said that the committee had been appointed not to regulate but to suppress this great evil of mixing grain down to its very lowest degree, the result of which was that a certificate of the New York Produce Exchange was now discredited over the world. The grain shipped from the primary wheat centers, as Chicago, or Toledo, may be mixed a little; at Buffalo it is tampered with more; but at New York the scientific work is put in, uniting winter and spring, small and large, sound and unsound, red and white, and even adding the screenings; and, what is worse, said the speaker, this is done under the supervision and advice of the chief inspector of this Exchange.

Mr. Husted was here called to order as indulging in personalities, and the charge was pronounced untrue. Mr. Husted denied unkind feeling. This matter was an abuse that had grown up gradually. The fact stated as to this mixing being done under the supervision of the chief inspector, was sustained by Mr. Henry T. Kneeland, with a case in point. Mr. Thos. A. McIntyre stated that he was a mixer, but knew nothing as to the screenings. He favored the amendment as benefiting the trade, making mixing more of a monopoly. This illegitimate mixing he knew was being carried on extensively, for he had sold 600,000 bushels from store in Brooklyn as No. 2 red, of which only 120,000 bushels left the port in that grade. The amendment was adopted.

WHERE HE DROPPED THEM.—"Did I drop any notes, William?" asked a young lady of her beau, as she turned away from the piano.

"Not that I noticed," was the reply; "but I understood your father did."

"Why, what instrument was he playing on?"

"The board of trade."

"I'll see if ma was calling me," said she, as she kicked the cuspadore into his hat and left the room.—*Newman Independent.*

Canals and Marine.

There is a movement being made by the vessel-owners and lumber dealers interested, to induce the general government to purchase the Sturgeon Bay Canal, which is a short cut from Lake Michigan into Green Bay, and free it from tolls. This was a private enterprise, occupying several years in construction, but one that is a benefit in general to shippers and commerce. A representative of the company says that they had no intention or desire to sell the canal, but were willing to do so, he thought, for the actual cost of the work, as shown by the accounts when made up. The first president of the company was Wm. B. Ogden; its office is at Milwaukee, Wis.

A report from Port Colborne, Ont., states: It is the intention of the canal authorities to put in the supply weir gates this spring, so that the water may be kept up to twelve feet on the aqueduct during the prevalence of northerly winds, thereby preventing the delays to navigation that occurred last year from the grounding of propellers, etc., at a period when every hour's delay was a great loss. It has also been rumored that, owing to the Grand Trunk obtaining possession of the Welland Railway, the rates for livery would be raised, and no such facilities furnished as last year, which, if true, would be a serious drawback to the St. Lawrence route. With livery as before over the Welland road, vessels to Port Colborne can be loaded to sixteen feet, passed over the canal at twelve feet draught, taking on grain at Port Dalhousie; while, if this cannot be done, it would not pay vessels to start from Chicago with a draught of over twelve feet. The rules for livery, the informant says, will probably be the same as last year, and prompt attention will be given to it.

The shipping interests of the Erie Canal are urging, by all possible means, the passage of the elevator bill now before the New York Legislature, which has secured, it is said, the unanimous indorsement of the elevator committee. Capt. De Puy, of Buffalo, who has been notably active in this matter, says that the accepted statement, to the effect that grain shipped by the Canadian water routes could be placed alongside vessels at Montreal in as short a time as the Erie Canal requires to take it to Rochester, and that while the latter route is conveying it to New York, the former can deposit it in Liverpool, indicates the character and danger of this competition. The actual running expenses of a Buffalo elevator, he states, are only \$44 per 100,000 bushels, or less than one-sixteenth of a cent per bushel. The Captain says that after a thorough investigation he learns of no other ports, either in the states or Canada, at which elevator charges are made for loading vessels. The bill above referred to allows the elevators half a cent per bushel for elevating, weighing and delivering grain; the trimming to be charged to boat.

The corn cargo of 60,000 bushels on the steamship Hope, in the harbor of this city, was reported on April 1 out of condition from being wet and heated. The steamship Hiawatha sprung a leak, and discharging part of her cargo, which was also corn, went into dry dock. The steamer Iron Chief, corn freighted, sprung a leak, and the grain in the lower hold, 34,141 bushels, was wet so solidly that the elevator legs could not be pushed into it. Of the entire cargo 20,608 bushels were discharged dry. There was also a report that the R. P. Ranney, loaded with grain, had met with a similar accident, but no particulars were given. All these accidents are said to be due to the strain upon the vessels of the severe winter, during which they have been embedded in ice. The damaged grain of the Iron Chief was sold at above date at auction by the agents for "the benefit of whom it may concern." The underwriters had not made up their reports but it was thought best to dispose of the grain at once. Mr. Hess, a distiller, took the whole lot at 33 cents per bushel. The total insurance on cargo was \$30,000; but the causes of the accident will be considered before settlement.

The arrangements for the season of lake steamer transportation have been completed in such a manner, it is said, as to place the entire control of freights, both by lake and rail, in the hands of the railway companies. An official of the latter is reported as outspoken to this effect: The roads are now in a position to do the whole grain carrying and other freight business, and propose to do the most of it. Rail rates have been put down now so that no more vessels will obtain cargoes. When navigation opens they will be raised, so as to induce shippers to forward by lake, and the road lines of propellers will be ready to carry the freights as fast as may be required. "We are going to handle," he said, "all the grain from Chicago." The leading shippers of Chicago admit that the present condition of matters justifies the above view. The pretended war of the roads is all a sham, while they have in reality fully pooled their interests. Vessel owners are reported to be despondent, and say that the roads have entered into a conspiracy to ruin the lake marine. After they have crowded out all competition, it is claimed, they will be in a position to fully control freight rates, and "put the screws on the public as they see fit."

The propeller lines reported under railway control are as follows: The Western Transit Co., eleven vessels; Chicago and Buffalo, controlled by the New York Central. The Anchor Line, twelve propellers and three barges; Chicago Erie and Buffalo, under the Pennsylvania Central. Union Steamboat Co., eleven steamers; Chicago and Buffalo, controlled by the Erie Railroad. Three new steamers are to be added to this line during the summer. The Lehigh Valley Line, Chicago and

Buffalo, six vessels; the Chicago & Ogdensburg Line, five steamers, two of them new, and one in the stocks; three other steamers will probably be chartered this season, one of them now on the stocks. These are owned and controlled by the Ogdensburg & Lake Champlain Railroad. The Lackawanna Railroad has built a commodious wharf at Buffalo, and is making extensive preparations for a lake line of steamers to Chicago. The ex-Commercial will probably form a part of the new line.

THE GRAIN PROBLEM.

The present important crisis in wheat, which finds its loudest expression in Chicago, and is common to every leading grain center in this country and in Europe, as well as in the Southern hemisphere and India, had its origin in Europe during the short-crop year of 1881-'82. The world's wheat deficiency, and especially the extraordinary shortage in the Eastern states that season, naturally led to higher prices in England, and these in turn to clean-swept granaries in the several exporting countries. But, to keep pace with an increased tonnage movement, the granaries happened to be swept a little too bare, and the result was a large over-supply in Great Britain, which had to be carried into 1882-'83, a year of big harvests generally, but more particularly in the Eastern states and India. In addition to carrying her usual reserves, England was compelled to take over a surplus of 2,000,000 quarters in 1881-'82, a surplus of 6,000,000 quarters in 1882-'83, and of 1,000,000 quarters in the first three months of 1883-'84, making in all an excess of 7,000,000 quarters, or 56,000,000 bushels, of which, however, a considerable portion has recently gone into consumption. England's great inducement in loading up in 1882-'83 was the expected general wheat deficiency in 1883-'84, consequent on poor harvests in Europe and the small yield in the Eastern states, where a shortage of 100,000,000 bushels has actually occurred. What entirely upset her calculation, is the recent large harvest in Australia, which, combined with the continued heavy shipments from India and the present fine crop prospects in Europe and America, has led to lower prices than at any time since 1851, when the average gazette price of British wheat was 33 shillings 6 pence per quarter. The result is the general ruin or crippling of English wheat operators, and severe losses by wheat speculators everywhere.

It is, however, interesting to note that the disastrous English wheat speculations which are now reacting on the markets of the world owe their first inception to the forced sales of California wheat during the calendar years of 1881 and 1882. In these two years California wheat and flour exports, expressed as wheat, reached the enormous total of 43,277,338 centals, or 72,128,897 bushels, mainly from her big crop of 1880, and as California shippers at that time speculated in ships and not in wheat the latter was absolutely forced upon English and Continental buyers at a heavy discount on the nominal shipping prices, and at a still larger discount on the current spot prices in Europe. Chicago and San Francisco were then moving in opposite directions. The former sold spot and futures at about the same price, while the latter submitted to a reduction of from 5 to 10 per cent. to cover the expense and risk of holding. The result was that European speculators went in heavily, and generally made handsome profits until suddenly overtaken by the big crops of 1882. This compelled them to become steady holders and bear the whole brunt of the Indian and Australian competition, which finally led to heavy losses or ruin.

The sustaining power of American as well as European operators is now greatly reduced, and hence the present unwarrantably low prices in London and Chicago. Wheat is always a good speculation when selling below the average cost of production in Europe, and that point was reached some time ago. So far the great bulk of the loss has fallen on European speculators, producers and ship-owners. It has scarcely touched the American, Australian, or even the Indian farmer. And this has ever been the case. When John Bull refuses to pay a fair price for his bread the British ship-owner has in a great measure to make up the deficiency. Except in the highly improbable event of a tonnage conspiracy, as in 1880-'82, unless the California farmer obtains a fair paying price for his coming bonanza wheat crop of 1884, which cannot be too large for the welfare of the state, he will insist on paying only a bare living rate for its transportation to Europe. But by that time the wheat crisis will be at an end, English stocks will have fallen to their ordinary level, the bugbear of Indian competition will be better understood, and a new set of speculators will have entered the market. It is to be hoped there will be plenty of room for fair freights as well as for fair prices, and that consumers, producers and ship-owners may all be happy together.—*San Francisco Chronicle.*

MARGINS IN OHIO.

A bill was passed by the Ohio House of Representatives on March 19 to prevent gambling in stocks, provisions and oils. The bill, as reported, provides that all contracts to sell or buy any of the stocks or commodities named, by the system of "futures," are against public policy, illegal and null and void. All transactions by "margins" and futures are declared gambling acts, with penalties of fines from \$50 to \$1,000, and thirty to ninety days in jail. Both sellers and buyers, and any person offering to do either, are guilty, as well as those owning and renting the premises for such purposes, who are liable thereby to a fine. It was said that the bill was gotten up in the interest of the telegraph companies, and that it would not suppress the evil aimed at.

The Trade.

Howes & Ewell, of Silver Creek, N. Y., recently made a large shipment of grain cleaning machinery to India.

The Great Western Mfg. Co., Leavenworth, Kan., are erecting a new foundry 60x150 feet, and a machine shop 50x100 feet.

Messrs. Edw. P. Allis & Co., Milwaukee, report a good trade, their shops being pretty full of work and a considerable number of inquiries coming in, with good prospects for spring trade.

Charles Kaestner & Co., of Chicago, Ill., contemplate building soon a foundry of seven or eight tons capacity per day. They will also add a planer six feet square and eighteen feet long; a Pitt Lathe with an eight to sixteen foot swing, and other machinery. They are putting in a Rose Combination Furnace.

Thornburgh & Glessner, of Chicago, are now completely established in their new quarters, Nos. 18, 20 and 22 N. Clinton street, Chicago, and feel in a position to handle their large and rapidly increasing trade in a manner mutually satisfactory to themselves and customers. Their new store is conveniently and centrally located, has an abundance of light, and is fitted up in first class shape. The business and private office is on the first floor, in front of the store and shipping room. The building is 52x150 feet, solidly built, and so constructed as to allow of additional height being added should occasion occur rendering more room a necessity. The floor above is used for the manufacture of the firm's specialties, consisting of elevator buckets, bolts, boots and conveyors. Besides furnishing their own conveyor, Thornburgh & Glessner sell Caldwell's manufacture, and all the conveyors used in the West are fitted here. They are sole Western agents for the Eclipse Elevator Bolt, and they manufacture on a large scale elevator buckets and corrugated bolts, elevator boots in three or four different styles, and handle rubber, leather, cotton and chain belting. This firm has been established only three years, yet in this short time they have had the satisfaction of increasing the volume of their business to three times its original size. The firm is young and pushing, and those who appreciate promptitude and desire their orders satisfactorily filled, will do well to enter into business relations with it.—*Northwestern Miller.*

From the Cincinnati *Merchant and Manufacturer* we take the following complimentary notice of the Lechner Manufacturing Co., of Columbus, O. Our contemporary says: For many years the transmission of power and complete utilization of all that is produced has been a problem with mechanics, one which has enlisted the best talent and endless experiment in its solution. It has long been known that in the employment of ordinary belting, particularly in the operation of extra heavy machinery, at least ten per cent. of the power was wasted by the slipping of belts, and loss of time. The Lechner Manufacturing Co., of Columbus, O., has done more, probably, to bring about a revolution in former methods in this particular than any other firm or individual in the country. Observation led the house to substitute for leather belts and smooth pulleys an entirely novel and, as experiment and use have proved, successful system of Roller Detachable Chain Belting and Sprocket Wheels, whereby, in all work requiring the lifting or removal of unusual weights, every iota of the available power can be directly applied. In this system such a thing as a slipping belt is utterly unknown, while the strength and reliability of the apparatus is exactly the difference between the tenacity of steel and leather. It is readily applicable to all descriptions of elevators, carriers, driving belts, etc., and is peculiarly adapted to the wants of coal and other elevators, such as are employed by tanners, ice men, manufacturers of chemicals, bricks, terra cotta, etc. The Sprocket Wheels upon which this belting runs are so constructed as to prevent friction, while the peculiar formation of the links of belting give the greatest possible strength and certainty of operation. It is made of the very best refined malleable iron, fitted to the sprockets with mathematical accuracy, and is beyond question preferable to any other known device for the purposes to which it is adapted. The company is widely and favorably known to the business public. It is an incorporated and chartered institution, with a paid-up capital of \$150,000, which may be increased to \$1,000,000 whenever desirable. The works are among the most extensive of the kind in the country, well supplied with the best machinery, and employing a small army of skilled workmen. It has been in operation for five years, and bids fair to continue for 100 more.

HARD WHEAT IN MINNESOTA.

A meeting of the millers and grain dealers of Southern Minnesota was held on March 14 at Winona, the object being to promote the cultivation of hard wheat.

The following grain dealers and millers were represented: B. D. Sprague, Rushford; La Grange Mill Company, Mazeppa Mill Company, and T. B. Sheldon & Co., Red Wing; H. W. Pratt & Co., Faribault; R. D. Hubbard & Co., Mankato; C. W. Seefeldt, St. Charles; Eagle Mill Co., New Ulm; W. W. Cargill & Bros., and Cargill & Hyde, La Crosse; G. W. Van Dusen & Co., and Whitten & Judd, Rochester; Hilyer & Tileston, Janesville; L. C. Porter Milling Co., O. L. Marfield, of Winona Mill Co., W. G. McCutchen, A. D. Ellsworth, G. H. Krumdieck, and O. Sontag, Winona; C. R. Blair, Eyota.

Mr. Albert Harrington, of Roches'er, was called to the chair, and Mr. L. C. Porter, of Winona, elected secretary. After the objects of the meeting had been stated there were expressions of views made by all the prominent dealers and millers present, to the effect that they would do all in their power to encourage the farmers of Dakota and Minnesota to raise hard wheat exclusively, and to improve its quality. It was decided to issue a circular to the farmers, embodying a notice of the meeting and its action, warning them against sowing soft wheat and that containing any smut, with a resolution as follows:

Resolved, That we, as millers and grain dealers, do agree that we will make a great difference in the price of hard wheat over soft wheat in the coming crop; that this discrimination against soft wheat be a timely notice to all farmers in their spring seeding.

NORTHWESTERN FARMERS AND THE GRAIN TRADE.

The Farmers' Convention of Minnesota and Dakota closed its three-days' session at St. Paul on the afternoon of March 27. The meeting was attended by 135 delegates, which represented 41 counties; in addition a large number of others present participated, and fully discussed the multifarious grievances of the farmers of the Northwest, with proposed measures, legislative and otherwise, for their redress. It was the plainly expressed intention of the members to control the next legislature of the state in the interests of the agricultural classes by the appointment of a state committee to extend the work through the agricultural associations throughout the state. It was not proposed to organize a third party, but to promote the objects of the convention by operating through existing organizations. In the course of the proceedings a very large number of resolutions were presented by members and various committees, and freely discussed. The report of the committee on resolutions, which was finally adopted, presents the following salient features: The preamble sets forth that great burdens have been imposed upon the agricultural and allied interests by the usurped powers of monopolies which threaten the future prosperity of the new Northwest. The convention recognizes the value of the thorough organization of the farmers of this section into associations for diffusing knowledge and obtaining legislative action on the matters in question. Among the special matters noted, for which legislative interference is desired, are these: The control and regulation of the minimum capacity of elevators by the railroad and elevator corporations. A demand is made for state control of, and uniformity in, the grading and weighing of grain received and shipped, by laws similar to those of Illinois. Unrestricted through freight transportation is demanded of the railroads, while the present freight rates are pronounced exorbitant, oppressive, and unreasonable. Congress is urged to pass a law regulating inter-state commerce, to go into operation as early as practicable. Free passes, given as a species of bribery by the roads, should be prohibited. Laws should also be enacted prohibiting and punishing the various food adulterations of the market. Improvements of the water routes of the Northwest are recommended, in particular, that of the Minnesota River through Big Stone and Traverse Lakes and the Red River, for slack water navigation. The letting out of convict labor is pronounced unjust as related to the work of artisans, etc., and should be abolished. An antagonism to the present national system of protective duties is expressed, as aiding the manufacturer at the expense of the producer, while the present revenue, by largely exceeding the requirements of the government, accumulates many millions of dollars in the treasury, "to be stolen by scheming rings of politicians," and members of Congress are urged to use their influence to lower existing duties to the point of simply supporting the government. Among the resolutions offered by other committees was one requesting the legislature to pass a railroad and warehouse law similar to those now in force in the States of Massachusetts and Illinois. The appointment of a state grain inspector was specially recommended by the committee on wheat grading and elevators. Before the close of the meeting nominations were received and the appointments made of the members of the congressional district committees, five from each district, forming a central committee of twenty-five members. A finance committee of three was also appointed. In the course of the meeting Prof. Whitney was called upon to explain the grades of wheat, and detail the methods of wheat-growing in Michigan. A report was also read by Mr. Haigh as to the chemical analysis of three different grades of wheat by the University of Minnesota, at the request of the Blue Earth County Farmers' Alliance, showing that there is no practical difference in the food value of these grades. The report was as follows:

	Grade No. 1.	Grade No. 2.	Grade No. 3.
Weight per bu.-heal.....	59 lbs.	56 1/2 lbs.	55 lbs.
Grains to weigh 10 grains.....	366	474	491
	per ct.	per ct.	per ct.
Foreign matter (seeds, etc.).....	0.41	0.20	1.57
Nitrogen.....	2.09	2.08	2.17
Phosphorus.....	0.35	0.46	0.46
Water.....	12.34	11.31	11.85
ASH.....	1.59	1.92	1.97
Albuminoids (nitrogen multiplied by 6 1/4).....	13.66	13.00	13.56
Cellulose.....	2.03	2.37	2.30
Starch, sugar, fat, etc.....	70.98	71.40	70.12

There is an important omission in this table for appreciating the comparative bread-making quality of the flours of these wheats, viz., the percentages of the insoluble albuminoids.

Fires, Casualties, Etc.

The two elevators at Norcross, Minn., with 7,000 bushels of wheat, have been burned.

P. Crowell, of the firm of P. Crowell & Son, grain dealers, of Boston, Mass., died recently.

Cyrus Clark, of the firm of C. Clark & Co., grain commission merchants at Buffalo, N. Y., is dead.

The granary of the Hannis Distillery Co., at Martinsburg, W. Va., was burned recently. Loss, \$25,000; partly insured.

A man named Joseph Daily recently had his jaw torn off in the starch factory at Madison, Ind., by the cogs of a corn sheller.

The grain warehouse of Pipwell, Lowery & Cook, at Beeton, Ont., Canada, was burned April 2. Loss, \$12,000; insurance, \$8,500.

The elevator at Metamora, Ill., owned by Peter Schertz, was burned March 25, together with its contents. Loss, \$6,000; insurance, \$3,000.

The grain elevator of William E. George, at Gettysburg, Ohio, was burned recently. The loss was from \$12,000 to \$15,000, partly insured.

According to the New York *Chronicle* there were twelve grain elevators burned in the United States during the month of December, 1883.

The elevator of Cargill Bros. at Kindred, Minn., on the Manitoba Railroad, burned March 17. The loss on building was \$5,000; insurance \$4,000. Contents not known.

The elevator of Pillsbury & Hurlbut, at Lone Prairie, Minn., burned April 9, together with 5,000 bushels of wheat and three Manitoba freight cars. Loss, \$15,000, fully insured.

Frank H. Morse, member of the firm of Spankle, Morse & Co., grain commission merchants, of Cleveland, Ohio, committed suicide recently by shooting himself. It was thought that poor health was the cause of the act.

Frederick M. Carney, a grain merchant of New York City, was accidentally shot and fatally injured March 11 by his friend John Heafy, a grain merchant of Liverpool, Eng., while they were practicing in the shooting gallery at the Windsor Garden, in New York.

A grain warehouse at Dubuque, Iowa, burst March 14. While the men were at work sacking the oats in order to save them they found the dead body of a man, smothered to death under the pile. His name was Perry, or Jerry, Davis, a resident of Clinton, and a stranger in Dubuque, who was on his way home.

The grain elevator of W. G. Beed, and the steam mill of S. M. Alderson & Co., at Hampton, Iowa, were totally destroyed by fire on the night of April 5. The loss of W. G. Beed on building and grain was \$6,500; insurance, \$3,700. S. M. Alderson & Co. lost on building, machinery, and grain, about \$6,000; insurance, \$4,500.

The large frame elevator at Ashland, Ill., owned and operated by Wm. R. Hunter, was consumed by fire on March 15. Some 5,000 bushels of corn in cribs was saved, but about the same amount of grain in the elevator was destroyed. The building was valued at \$8,000; insured to nearly its value. There was \$1,500 insurance on the grain. The cause of the fire was not ascertained.

W. W. Wilson, engineer of the mill of Heath Bros., at Shelby, Ohio, had a miraculous escape from death March 10. About ten feet above the engine room a large bin for the storage of wheat is located, a solid brick wall a foot thick forming one side of the bin. As Mr. Wilson was shutting off the steam he heard a cracking noise, and looking up he saw that the wall was giving way. He rushed out just as the wall crashed through, and over 2,000 bushels of wheat poured into the engine room, completely filling it. The loss entailed was about \$200. The enormous pressure of the wheat caused the accident.

CANALS AND THEIR COST.

The following table comprises the canals of the United States and Canada, of which the cost has exceeded \$1,000,000 each:

NAME.	State.	Length Miles.	Cost.
Erie.....	New York.	383	\$7,143,789
Champlain.....	"	63	1,257,604
Chenango.....	"	97	2,419,956
Central Division, public.....	Pennsylv'a.	173	5,807,252
Western.....	"	104	3,096,522
Susquehanna Division, public.....	"	39	1,089,256
N. Branch.....	"	73	1,086,176
N. Branch, Exten.....	"	90	3,598,302
Delaware Division.....	"	60	1,275,715
Schuylkill " private.....	"	108	2,500,176
Lehigh ".....	"	85	4,455,099
Union.....	"	82	"
Delaware & Hudson.....	N. Y. & Pa.	108	2,500,000
" enlarged.....	"	108	6,500,000
Delaware & Raritan feeder.....	New Jersey	43	2,844,108
Morris & Essex.....	"	101	3,100,000
Chesapeake & Delaware.....	Del. & Md.	134 1/2	2,750,000
Chesapeake & Ohio.....	Maryland	191	10,000,000
Ohio & Erie.....	Ohio.	307	4,695,824
Miami.....	"	178	3,750,000
Sandy & Beaver.....	"	76	1,500,000
James River & Kanawha.....	Virginia	147	5,020,050
Wabash & Erie.....	Indiana.	379	"
".....	"	90	3,057,127
Illinois & Michigan.....	Illinois	102	8,654,333
Welland.....	Canada	36	7,000,000
St. Lawrence.....	"	10	1,000,000
Cornwall.....	"	12	2,000,000
Beauharnois.....	"	11	1,500,000
Lachine.....	"	8 1/2	2,000,000

Items from Abroad.

In Australia wheat-raising has been stimulated of late years until now that country reports a surplus of 24,000,000 bushels of that grain awaiting shipment; while nearly 12,000,000 bushels more are stored in Southern Russia.

The London, E. g., *Daily Telegraph* advises the farmers of Manitoba not to grow wheat for Europe, as they cannot compete with European and Indian wheats. The *Daily Telegraph* thinks that the present low rates for wheat will be permanent.

An action was recently brought in a court in Dublin, Ireland, to recover damages for alleged injury to a cargo of grain shipped at New Orleans. The defense claimed that the grain was shipped in a proper condition and had been properly stored. Leave was granted to examine a ship agent and stevedore as to the condition in which the grain was shipped.

The Dublin Granaries Company held their half-yearly meeting in Dublin, Ireland, recently. It was reported that the past year had been a good one for the company, their stores had been nearly full most of the year, and, as a result, the shareholders had two per cent. more to divide than the previous year, besides restoring the reserve fund to its former figure.

The Millwall Dock Company, of Millwall, Eng., held its half-yearly meeting Feb. 22. The chairman stated that they expected soon to have their warehouses completed, but they were at present hiring accommodation for their grain. When completed, they would have storage capacity for 300,000 quarters of grain. The amount spent on the new warehouses would, by the time they were finished amount to £108,000.

The New York *Sun* gives the following estimates from an Adelaide paper as to the wheat crop of South Australia: A 1,900,000 acreage produced, at eleven bushels per acre, 20,900,000 bushels. The cost of production, bringing to market, with a fair living profit, is placed at \$7 per acre, or \$13,800,000 aggregate; deducting this sum from the total value of above crop, viz., \$20,900,000, will give the farmers a surplus profit over a living of more than \$7,500,000, if all goes as is anticipated.

The grain merchants of Limerick, Ireland, some time ago placed before the Town Council of that city a scheme for a local tramway, designed to transport their goods more readily from the dock to the railway termini of their different stores. This plan was opposed by the city carters and laborers, who saw that their occupation would be gone, and the day on which the corporation met to consider the scheme these men stormed the council chamber, and the meeting adjourned. These 700 Irish laborers made matters very interesting for some time, though happily no person was injured.

A case was recently decided in Dublin, Ireland, against some Queenstown corn merchants for the recovery of freight. The case was *Jean Luinde vs. J. C. Helbig & Co.*, in which the plaintiff sought to recover from the defendant the freight for the carriage of a cargo from Queenstown to Baltimore, and damage for demurrage. The plaintiff, who resides in Sweden, and is owner of the barque *Condor*, says that he carried the cargo as agreed upon, but alleged that he had been paid for the carriage at a lower rate than that stipulated by the charter party, and that the vessel had been delayed a number of days beyond her time of sailing, waiting for the cargo being put aboard. The defendants contended that they had chartered the vessel at the rate according to which they had paid, and that the painting of the vessel caused the delay in port. The jury found for the plaintiff in the sum of £126.

The chairman of the Committee of the Corn Trade, London, Eng., has published the statement that the trade will oppose the city of London grain duty bill, which has passed the second reading unopposed. An official of the city corporation replies with the following statement of facts: In 1871, when the preservation of Epping forest was being mooted, this gentleman induced the corporation to offer to Parliament the surrender of the right it then held to the metage on all grain received at port, in consideration of the privilege to levy a tax on this grain of $\frac{3}{4}$ of a cent per hundred weight for thirty years; the corporation pledging that the full receipts should be applied to the preservation of open spaces near the metropolis. The result of the Act of 1872 has been the preservation to the public of Epping Forest and three other vast parks. The present bill asks an extension of this small duty, for a certain period, in order to continue this work in other directions. The producers, says the writer, do not oppose it, or the consumers, upon whom it imposes a tax of about half a cent on 150 pounds of bread. This levy now produces about \$120,000 on an annual receipt of 1,500,000 tons of grain.

KING PHILIP GIVES A POINTER.

The *Baltimore American* relates the following: A good story is told on 'Change of the late visit to Baltimore of Mr. Philip D. Armour, the great grain operator of Chicago. He was introduced on 'Change by a broker, and in a general conversation upon the condition of the markets both in Europe and Chicago he expressed the opinion that there was profit in buying wheat in Chicago at 96 $\frac{1}{2}$ cents. The advice was apparently sincere, and at the time—the weather being very unfavorable for growing crops, and being given by so well informed an operator, who was just from the part of the wheat grow-

ing and selling country—was considered a good point. What did the broker do? Why, he took the advice, and sold 1,000,000 bushels in Chicago, and made a big thing, for the market has been going down ever since.

MARINE INSURANCE FROM CHICAGO.

The preliminary meeting in March of the Chicago agents of the Marine Insurance Companies has been followed by a two days' convention on April 8 and 9, in this city, of the representatives of twenty-four of these companies, which were as follows: Girard Fire and Marine, of Pennsylvania; Phoenix, of Brooklyn, N. Y.; Great Western, of New York; Greenwich, of New York; Exchange, of New York; Firemen's Trust, of New York; Continental, of New York; Universal, of London, Eng.; Union Marine, of Liverpool; Commercial Union, of London; Thames and Mersey, of England; Western, of Toronto, Can.; British America, of Toronto, Can.; Mercantile, of Cleveland, Ohio; Etna, of Hartford, Conn.; Detroit Fire and Marine, of Detroit, Mich.; Buffalo, of Buffalo, N. Y.; Union, of Philadelphia, Pa.; State, of Pennsylvania; Michigan Fire and Marine, of Detroit, Mich.; St. Paul Fire and Marine, of St. Paul, Minn.; Traders, of Chicago; Boston Marine, of Boston, Mass.; Boatmen's Fire and Marine, of Pittsburgh, Pa.

These companies were represented by thirteen Chicago agents, and by their officials, such as presidents, secretaries, general managers, etc. It is stated that there are twenty-seven companies so engaged, aggregating a capital of over \$32,000,000. Of this the Continental hold \$4,200,000; the Etna \$4,000,000; the Phoenix \$2,700,000, and the Boston Marine \$2,000,000; and they constitute the four leading companies of this country. Mr. Wiley M. Egan was called to the chair, and H. C. Ranney chosen secretary. A motion was adopted that a marine pool be formed to cover all the grain, etc., shipped, by lake from Chicago during the season of 1884. The agents reported that no contracts had been made. On motion a committee of five were appointed by the chair to apportion the shares among the various companies, which committee, on consultation, found that they could not agree. Capt. Prindiville, representing the Continental, showed written instructions specially designating the number of shares which that company would require if they entered the pool; this demand was regarded by the others as too large. This committee was discharged, and a new one appointed, who took the rest of the day for the consideration of the matter. On motion a committee of five was appointed on agents' commissions. A resolution was adopted that no company shall have more than one agent in Chicago. The convention then adjourned until the following day.

The second day's session was delayed considerably by waiting for the report of the apportionment committee. The report when submitted, however, did not meet the views of all, and failed of adoption. The proposed distribution had been made on the basis of 100 shares, of which 10 each were to be distributed among the four principal companies above named, and 60 among the rest, but a less number was assigned to the former. Capt. Prindiville, who had been instructed and empowered to act by General Agent Dimmick, of the Continental, refused the company's compliance, and also refused to ask for further instructions from New York. To a communication sent by others to the home office, President Hope being absent, Dimmick returned a refusal. A motion then made to enter upon the pool without reference to the Continental was lost, the Boatmen's Co., of Pittsburgh, alone voting for it. And so the convention split on this rock, and in spite of the experience of years in this cut-throat business, with heavy losses on the part of the underwriters who took these risks, which were especially great in the shipping disasters of last year, these vast conflicting interests failed to harmonize, the contending factions having become more numerous as time has passed.

After the adjournment *sine die* of the convention, the general agents and officers remained and consulted. A courteous response was received from President Hope, which had been delayed, but its purport expressed confidence in the judgment of General Agent Dimmick. A telegram from the latter refusing to take less than ten shares settled the matter completely. It has been since rumored that these officers and agents held a meeting, which resulted in a small pool. Some ten or eleven companies were represented, among which were the Phoenix, Etna, and Boston Marine.

In interviews with members during the session of the convention the Chicago *Tribune* learned that there was a general feeling that rates cannot be maintained without a pool. As to modifying the hull rates, and terms recently adopted at Buffalo, as the Chicago Vessel Owners' Association request, the reply was that all the companies were bound to the Buffalo agreement. It was also stated that no change was probable as to the present discrimination against sail-craft in favor of steam. It was desired to get rid of the old-fashioned small sail vessels. Steam, and tow and steam, were now the general demand. On the former the losses of last season were immense. An important factor in the greater hazard of sail risks is the time required, which is double that taken by steam.

The Chicago Board of Trade, by a vote of 427 to 25, has adopted the following amendment to Rule 15: "For selling corn by sample on track, or free on board cars, one per cent. per bushel" is struck out and "For selling corn otherwise than in store, one cent per bushel," is inserted.

Notes from the Exchanges.

It is reported that there are over 600 members of the St. Louis Merchants' Exchange who have not yet paid their annual dues for 1884. They are consequently barred from the privileges of the floor.

The New York Produce Exchange has adopted the following regulation of inspection: "All wheat to be graded into store or vessel shall be inspected and graded before being elevated, and a full record kept of each lot. Wheat shall hereafter be inspected separately into boats."

The Board of Trade of Terre Haute, Ind., was formally opened on March 20, Mr. R. G. Hervey, President, in the chair. R. W. Thompson delivered the inaugural address, followed by C. O. Thompson, of the Polytechnic Institute, and Col. Fish, Mayor of Racine, and head of the firm of Fish Bros. After the formal opening the members and guests were entertained at dinner.

At a meeting of the Directors of the Baltimore Corn and Flour Exchange, on March 10, the following were elected members: Wm. H. Stillman, Geo. W. Farnam, J. W. Campbell, Jas. N. Haswell, J. P. Alexander, and Geo. E. Condon. Pierce Ryan was elected sampler of track grain on the B. & O. Railroad, and J. B. Inglehart assistant on the Northern Central and Western Maryland Roads. Geo. H. Baer, Wm. S. Young, C. D. Fisher, and B. F. Newcomer were elected Directors in the Chamber of Commerce Building Co. on the part of the Exchange. It was voted inexpedient at present to establish a uniform rate of commission and charges on car grain.

The statement is made by an observing resident of New York, that the "bucket-shop" business obtains a large and active patronage from the women of that city, who are supplied with ample facilities, lady clerks, and offices in localities adapted to their convenience and tastes. The capital and "tickers" with market quotations, are furnished by Wall street brokers, and the speculations of these feminine gamblers, it is said, aggregate an amount sufficiently large to be a feature in the options of that great Exchange. There are several of these offices quietly located on Twenty-fourth street, where the "tickers" are clicking their fascinating story all through the business hours of every day, connected with the Exchange by numerous wires; and ladies of all ranks and conditions, concealed by veils and waited upon by veiled hours, venture their large and small sums, influenced by all the varied motives that govern the speculative appetites of men. On Thirty-seventh street an extensive establishment is conducted by a woman of special talent in this line, who has been so engaged for a number of years. She requires a 10 per cent. margin on all purchases, and charges the usual brokerage of 12 $\frac{1}{2}$ cents per \$100 for all dealings. Her orders are telegraphed to Wall street, and immediately filled. Some of the wealthiest and most fashionable ladies of this metropolis are among her patrons, as well as sewing girls, milliners, etc. But with all alike the rule, with rare exceptions, in the end is the same—they become victims.

ELI'S LATEST.—Eli Perkins passed through St. Louis to-day on his way East. Mr. Perkins has been examining the wheat fields throughout the entire winter wheat belt from Philadelphia to Emporia, Kan., and from Toledo to St. Joseph. A *Post-Dispatch* reporter met Mr. Perkins in the Southern Hotel corridor, and asked him about the winter wheat prospects. He said:

"I have not seen such a fine prospect for winter wheat for ten years. It is everywhere good. I have sought in vain for a poor field of wheat for the last two weeks."

"Did you find it?"

"Yes, I did finally find a little section of wheat twenty miles square, south of Du Quoin, Ill., where the wheat was not good. This is the only poor wheat in the United States."

"Where do you see the best winter wheat?"

"In Pennsylvania and Kansas. The Pennsylvanians will raise 50,000,000 bushels of wheat this year. The wheat in Michigan is phenomenally good. Missouri boasts the best wheat crop that it has had for five years. Illinois wheat, till you get to Du Quoin, is splendid. Ohio was never better off."

"Do the farmers predict insects?"

"No. Day before yesterday I asked a crowd of Missouri farmers over at Sedalia if they anticipated insects, and they said, 'No.' They all agree that insects were only liable to come after warm winters. They said: 'The wheat is short and stocky; it hugs the ground, but its roots are deep. The stand is everywhere good. Nothing can prevent a great crop.'"

"What will be the effect of this great crop of wheat?"

"Why, its effect is being discounted in Chicago now. July wheat has fallen five cents in this market. Wheat has been sold for delivery in Liverpool at a dollar a bushel."

"Do you mean wheat is to be put down in Liverpool at a dollar a bushel?"

"Yes. And that will break up wheat raising in Europe. They can't raise wheat at a dollar a bushel on land worth \$300 an acre. It will be seemingly hard on the American farmer, this cheap wheat, but it will be a blessing in the end. It will open new and unknown channels for American wheat, and after this year our country will raise wheat for the world. I predict a yield of 600,000,000 bushels of wheat in this country this year."

The above conclusions, Mr. Perkins says, are the result of very careful examination and inquiry.—*St. Louis Post-Dispatch*.

THE AMERICAN ELEVATOR AND GRAIN TRADE

Published on the Fifteenth of each Month by
MITCHELL BROS. COMPANY.
(INCORPORATED.)

OFFICE: Howland Block, 184 and 186 Dearborn St., Chicago, Ill.

Subscription Price, : : \$1.00 per Year,
English and Foreign Subscriptions, 1.50 "
English and Foreign Subscriptions may be sent to W. H. Smith &
Son, 186 Strand, London, W. C., Eng.

A. J. MITCHELL, - - - Business Manager.
HARLEY B. MITCHELL, - - - Editor.

Vol. II. CHICAGO, ILL., APRIL 15, 1884. No. 10.

ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

THE HENNEPIN CANAL.

The House Committee of Congress on Railways and Canals agreed on April 9 to report favorably the Hennepin Canal bill of Gov. Cullom, of Illinois. The route surveyed under the order of the Secretary of War, designated by Maj. Benyuard as the Rock Island route, is approved, together with the branch canal or feeder from Rock River. The bill provides that the canal shall be eighty-five feet wide at the water line, and navigable for vessels of at least 280 tons. The Secretary of War is directed to secure the right of way by agreement with or purchase from the owners, if reasonable terms can be had; if not, proceedings are to be instituted to condemn the lands that are required. The work is ordered to be commenced as soon as practicable, and within six months after the passage of the act; and \$1,000,000 is appropriated to commence the work.

NORTHWESTERN FARMERS AND THE MONOPOLIES.

The Committee of the Farmers' three days' convention at St. Paul opened on March 18, have issued an address which has the ring of a political manifesto. Says the report: "Kings of monopoly have secured legislation through the bribery of legislatures, a subsidized press, and unlawfully usurped powers, until the industries of agriculture, trade and commerce are made to contribute their legitimate profits to corporate bodies beyond all reason." And later, in speaking of the profits of these railroads which had received special privileges and large public aid, passing through the great cereal districts of the Northwest, that they had made by their charges and methods a profit of not less than 40 to 52 cents on every dollar paid to them. The specific charges of the address as to unjust grading and freight rates, of rings made to prevent farmers from obtaining transit cars for shipping their grain except through the regular elevators and channels, etc., are the same that have been fully ventilated at these farmers' meetings, and published. The address distinctly designates the Millers' Association, of Minneapolis, as the head of this monopoly, which, owning largely the elevators and controlling the roads, holds in its grasp the whole wheat crop of the Northwest. The claim put forth by the railroads of having made liberal concessions, is denied. Their granting permission to build elevators of 5,000 bushels capacity was, says the address, merely retiring from an illegal usurped control. The claim to having reduced freight rates 10 per cent. is untrue, as "by re-classification of freights, weights and local rates there has in fact been an average increase instead of a reduction." The fact is alluded to that railroads, in addition to the pooling of their own rates, are now conspiring to

obtain control of the transportation of the waterways, canals, lakes, etc., that have been heretofore the great conservative factor in a fair competition, in favor of producers and shippers. The advice given by the committee is, that the producers of the country should band together, standing shoulder to shoulder in meeting these monopolies and their vast control, which has extended even to the lumber and materials for building. That systematic organizations should be entered upon by farmers with plans inaugurated and thoroughly executed to meet these aggressions; that the war should be carried to the polls, and no man be elected to office who is not fully identified with the great agricultural interests of the country.

FIRE HAZARD OF ELEVATORS.

Whether rightfully or not, grain elevators and warehouses have not been regarded with much favor by insurance companies. In this, as with many other classes of risks, the experiencing by insurance companies of heavy losses is largely due to their want of care in the selection of risks, and their vicious agency system which puts a premium on carelessness in accepting risks, since the agent has little or no care beyond securing his commission. Nevertheless, figures show that a good many elevators burn.

We have before us the New York *Chronicle's* Fire Tables for nine years, viz., from 1875 to 1883, inclusive. From these tables we learn that in those nine years 341 elevators were burned in the United States, 78 of these fires occurring in 1883. In these same nine years 13 elevators were reported burned in the Dominion of Canada. There are reported in addition to the above the destruction of 3 floating elevators, all of which, we believe (though not stated), were at Baltimore. Of grain warehouses, 240 were reported burned in the United States in the nine years named, 39 being credited to 1883, while in Canada 35 were burned in the same period, 6 of which were credited to last year.

Figures like the above would seem to indicate that the fire hazard has been increasing; but the number of fires occurring in any class of risks is not always a fair measure of the fire hazard; for a class of buildings like elevators and grain warehouses may be increasing in number very rapidly. There were exactly as many tanneries burned in the nine years as elevators, and within three of as many breweries. There were twice as many ice-houses burned, and more than twice as many churches, four times as many cotton gins, and five times as many flour mills. So elevators are not the worst risks, by a very large majority.

MISTAKES SOMEWHERE.

Granaries "bursting with their load" has always been a synonym of plenty; but when the thing actually occurs, as it has been occurring too frequently of late, something else besides plenty is signified—and that is, defective construction of the elevator to start with, or else carelessly loading it beyond its capacity by the proprietor. We chronicle this month the bursting of another warehouse, attended with a fatal result, the last of a long list of such casualties that we have been called upon to record the past year. We are not one of those who seek to attach blame in cases of this kind, for we believe that if their lessons are only heeded, public interests are subserved. Still, we cannot avoid the reflection that in the majority of the cases to which we allude the real cause of the disaster lies with the proprietor rather than the architect. Builders very generally understand perfectly well the conditions requisite for absolute safety in structures, and when these conditions are neglected it is usually because the one who holds the purse is unwilling to pay for them. Then again, old warehouses that have seen their best days, and need strengthening, are too often burdened with a strain which they could hardly bear if new. We do not want to harp on this or any other subject; but the number of casualties of this kind happening in every part of the country, continually offers the text to preach a sermon on proper care in this direction, and the sermon should be heeded.

A FARMER'S LINE OF ELEVATORS.

The committee of the Farmers' Convention at Moorhead, Minn., relative to securing an elevator system separate from those in operation, have published a full report, which presents these important facts and suggestions: After examination it is not advised to undertake the great expense of building at Duluth or elsewhere on the shore of Lake Superior, where elevator facilities seem to be now ample. The report says, however, that the facts all show that it is vain for the farmers to hope for a free, open market under the present system and management of the country elevators; nor can legislation, however wise, be relied upon alone to correct the present causes of complaint. In common, therefore, with the views held by other recent conventions of producers, a thorough organization of the agricultural interests, with prompt, judicious action, is urged. It has been found that satisfactory arrangements can be made with prominent independent grain dealers, while Messrs. Manvel and Oaks, in behalf of the roads, have offered to aid to the extent of their power in giving grounds, cars, and facilities. A free and open market for grain shipping to any point, with identity and reliability in grades and weights, would be to the farmers and consumers an inestimable blessing.

A letter to a member of the Northwestern Grain Dealers' Association, of Minneapolis, brought a reply from the President, Mr. E. Locke, containing an offer as to the construction and management of a system of elevators for the Red River Valley, consisting of not less than twenty, within the extreme costs of \$3,000 and \$4,000 each. These are the prominent features of the plan: Mr. Locke agrees to build an elevator, say, of 30,000 bushels capacity, to be operated by horse-power, and so managed that its patrons may, if they choose, ship and preserve the identity of their grain. He will guarantee the weights of such shipments at any receiving points selected; he will pay a certain price for wheat on delivery, or will ship on account at the usual charges for handling, fifteen days' storing, insurance, etc., of two and a half cents per bushel, and everything shall be done on the principle of justice, equally to all. For building, the president offers to furnish one-half the capital for houses as above described; the remainder to be in notes, placed in bank, from responsible farmers, of not less than \$50 each, payable on or before Nov. 1, if the house be in readiness; or if completed sooner, the stock to be made out and placed in bank, to be given to the makers of the notes on their payment. Mr. Locke also agrees to organize a joint stock company in which the farmers shall have a fair representation, the stock issue to be based on actual expenditures, and the value of elevators. A feasible plan is also suggested for operating this line by leasing it to the Grain Dealers' Association on mutually satisfactory terms, say, at the rate of one cent per bushel of the grain handled, payable at the end of each month, which he believes would assure a reasonable remuneration to the stockholders and relieve them of personal care.

Whether this or some other plan be deemed the best practicable one, clearly the time has come in the midst of these bitter complainings and mutual recriminations for the agriculturist to learn the lessons of the practical operation of corporation interests. Foresight, coolness, and patience, based on intelligence and practical business sagacity, with capital ample for calmly meeting emergencies, is demanded in their wisest and most honorable management. There are favorable times, when large profits are readily made, but there are also often long continued periods of depression, when the profit balance falls to zero, and losses, perhaps, take its place.

The Council of the Russian Empire have approved, by a large majority, the proposed concessions to the Russo-American Elevator Co., which contemplates erecting grain houses throughout the country. The editor of the official journal of Moscow, however, opposes the measure on national grounds, and it is doubtful whether the Czar will sanction the scheme.

Editorial Mention.

THE grain market is a good thing not to give advice about.

FIVE elevators burned in Michigan last year, and four in Indiana.

SIXTY-FOUR new members were added to the Chicago Grain Receivers' Association at one meeting recently.

MR. GEO. P. MCNEAR, of Petaluma, Cal., in subscribing, writes: "Any one in the grain trade can ill afford to be without your paper."

It is said that a number of Dakota farmers propose to accept the offer made by the railway company to build a 30,000-bushel elevator for \$2,100.

MESSRS. JACKSON & ROTHWELL, of Walkerton, Ont., write: "We like your paper, the AMERICAN ELEVATOR AND GRAIN TRADE, very much."

ONE morning recently 500,000 bushels of wheat changed hands in the Milwaukee Chamber of Commerce within ten minutes after the opening of business.

MESSRS. HUGHES & CROCKER, of Baltimore, Md., write: "Your paper has been the source of much information to us, and we cheerfully renew our subscription."

THE Board of Underwriters in this city have done away with the six months' rate on grain in elevators, and have placed everything on the annual rate basis.

THE article elsewhere in this issue on the Chicago Board of Trade will be found interesting by those who wish to understand the machinery of that great institution.

W. G. ADAMS, of Sandwich, Ill., announces that he is now furnishing licenses under the patents owned by James M. Harper, with all the grain dumps he is selling.

FOREIGN countries look complacently on the depressed grain prices here; but only the bears are able to rejoice. As a people, we are interested in cheap food; but not too cheap.

MR. JOHN THOMAS, of Dunbar, Neb., writes us: "I like your paper, and the information contained therein is useful, not only to grain men, but the reading public generally."

THE farmers of the Northwest can build and operate their own elevators if they like; but they must remember that they cannot fix the price of grain. They seem to have overlooked this fact.

ELI PERKINS promulgates his usual nonsense in regard to the growing wheat crop. Eli endeavors to be a bull, but he shows by his statements that he has long ears instead of long horns.

SIR SAMUEL BAKER pronounces Soudan the granary of the world, and says that if it were in English hands Great Britain would soon be entirely independent of the United States, both for grain and cotton.

PARTIES having elevators for sale should advertise them in our columns. This journal reaches every month thousands of men interested in the grain business, among whom are the most likely purchasers of such property.

WE neglected last month to note the receipt of the engine catalogue of the Paige Mfg. Co., along with their catalogue of patterns. Users of steam power, present or prospective, should read the large advertisement of this firm in this issue, and send for this catalogue, which is copiously illustrated.

AN exchange, *Seed Time and Harvest*, says of our paper: "It is very nicely printed, and we should consider it a valuable aid to those in any way engaged in the manufacture of grain products or in handling the same."

MR. WARREN ARMINGTON, formerly of Arming-ton, Ill., but now of Natrona, Ill., in subscribing, says: "I have just leased property here, and expect to handle both grain and lumber. A grain man cannot afford to be without your paper."

MESSRS. THOS. E. PORTER & Co., produce commission merchants of New York City, write in subscribing: "We have seen three numbers of your journal in all, and are very much pleased with them, both for amount and variety of information. We desire to see other numbers, hence the subscription."

MESSRS. CAYWOOD & Co., grain dealers and millers at Vining, Kan., write us: "The AMERICAN ELEVATOR AND GRAIN TRADE appears at our office regularly. We find much valuable reading matter in it of interest to any one engaged in the grain or milling trade; and neither bull or bear can make a better investment than to inclose as herewith, wishing you success."

THE Lechner Mfg. Co. of Columbus, Ohio, report a brisk business for the past month. They have received a large number of orders for their Roller Detachable Chain Belting for elevators, conveyors, and driving belts. They will be pleased to correspond with parties contemplating the use of detachable chain belting, or anything in their line.

THE FROST MANUFACTURING Co. of Galesburg, Ill., one of the oldest and best known establishments of the kind in the West, have a neat card in this issue. They build engines and boilers of any required capacity, and can furnish everything required in the equipment of an elevator. They will be pleased to send estimates to interested parties.

QUICK WORK.—On April 15 the Webster & Comstock Mfg. Co. of this city received a telegraphic order for 12,000 elevator cups, and at 4 o'clock the same day the cups were in the depot ready for shipment. Promptitude of this kind is appreciated by customers who are in a hurry, and who too often cannot induce those they order from to appreciate the fact.

WE have been shown a very strong letter from Mr. John Warner, mayor of Peoria, Ill., speaking in very flattering terms of the efficiency and reliability of the pumping engines furnished by the Dean Brothers Steam Pump Works of Indianapolis, Ind. The engines in question have been in use nearly nine years, and as Mayor Warner says, "have never failed in a single instance."

W. R. BUCHANAN, of Mt. Union, Iowa, in subscribing, says: "I want to build an elevator the coming summer, and thought your paper would be a help on account of the advertisements of machines." This is something too often overlooked—that the most valuable part of a trade paper is its advertisements. No one who neglects to read the advertisements of a paper can keep posted as to what is going on about him.

NASBY in one of his letters says: "The only thing in this world that does not fit in and add something to its surroundings is an American grain elevator. That adds to no landscape, and improves nothing. It is immense, and as ugly as it is immense. But the elevator is not a work of nature. It is born of greed and there is nothing beautiful in greed." Messrs. Seeley, Son & Co., of Fremont, Neb., take exception to this. They believe their plan of elevator is not only useful but artistic. The Seeley elevator is certainly not "ugly," nor is the circular elevator. Still, Nasby forgets that utility comes first in this world, and beauty next.

THE WEBSTER & COMSTOCK MFG. Co. of this city have issued a very neat catalogue and price list of their well-known specialties, a copy of which we have before us. All who are interested in conveying, elevating and transmitting machinery will find this catalogue useful for reference. We notice a formidable list of elevators which they have supplied with buckets, and the item is worthy of mention that last year they shipped some 600,000 cups. The catalogue is neatly printed and in every way creditable.

THE Cincinnati Corrugating Co., of Cincinnati, send us a very handsome catalogue describing and illustrating the application of their fabrics. Corrugated sheet iron has long been used as a sheathing for buildings of every kind; and experience has demonstrated its utility, as the letter of the Fire Marshal of Cincinnati, published elsewhere in the card of this company, aptly says. We notice among the illustrations in the catalogue in question an elevator represented as entirely sheathed in corrugated sheet iron from top to bottom.

THE present is, commercially, an age of trade literature and "samples," and the sending of both through the mails is a part of almost every business enterprise. The Clasp Envelope, made by the Clasp Envelope Co., of 39 and 41 West Broadway, New York City, is offered in this issue as a neat and cheap means of sending samples of grain, flour, seeds, etc., mailing catalogues and sending small samples of fourth-class matter through the mails. The prices have lately been reduced, and are very reasonable. Samples and price lists will be sent to those applying for them.

THE ADVICE of the millers and wheat dealers at their recent meeting at Winona, Minn., that farmers use only hard wheat for seeding this spring, and agreeing to make a difference in the price of hard and soft wheat, meets from the Mankato *Free-Press* comments to this effect: It will be well for intending wheat-growers to investigate this matter before seeding. While the promise made is indefinite, it may be taken for granted that hard wheat, even if, as claimed, the yield of the soft variety is greater, will prove more profitable. The grading of the latter is lower, and its price less in the market, while it will be well for the producer to cultivate the variety that meets the special favor of his customers.

AMONG the new advertisements in this issue will be noticed that of Beal's Flax Seed Cleaner, upon which a patent was issued by the Government on March 11, 1884. This machine, while in itself simple, is a combination of ingenious contrivances by which peculiarly good results are claimed to be obtained. As a cleaner of flax seed it is claimed to be without a peer, and at the same time it is asserted that it will clean wheat, clover and timothy seed as well as any cleaner offered. The claims made under the patent are strong ones, and the manufacturers, Messrs. G. E. Stokes & Co., of Gilman, Iowa, sell the machine under a guarantee that it will do all that they claim for it. Grain dealers and others needing such machinery are invited to correspond with them.

ONE of the finest illustrated trade catalogues we have ever seen is that just issued by the Link-Belt Machinery Co., of this city. The book contains 140 pages, and is superbly illustrated with 160 fine engravings, depicting the specialties of this company, and portraying the multifarious uses to which link-belt has been successfully applied. Among the novel features of the work are the *fac-simile* autograph letters from well known manufacturers and others who are using link-belt, and who endorse it. Parties who wish to see how wide and diverse are the industrial applications of this simple device should glance over this catalogue. A full and exhaustive work such as this is a great help in a business of any kind, and the Link-Belt Machinery Co. may well flatter themselves that the catalogue in question is not only creditable to their taste and enterprise but a good business stroke as well.

THE GROWING WHEAT.

Reports from various sources as to the condition and prospects of our growing wheat crop present views and facts as follows: The Northwestern spring wheat belt shows but little change from the conditions of previous years. In the older states, such as Wisconsin, Illinois and Indiana, there is a marked diminution in wheat acreage. But in Dakota, Minnesota and Nebraska this is offset by a large increase. In Brown county, Dak., an increase of 50 per cent., and in Clark county of 500 per cent., are reported. The outlook in Western and Northwestern Minnesota is flattering, and it is said that there has never been there a better spring for seeding wheat than the present. A review of the reports indicate that in 50 per cent. of this belt the old acreage is maintained; and that the increase and decrease at other points are about equal to each other.

A letter received on April 10, at Milwaukee, by S. W. Tallmadge, of the Chamber of Commerce, from Edwin F. Smith, Secretary of the California State Board of Agriculture, as to the wheat crop of that state, says: The reports show that, unless some unexpected disaster occurs, the yield there will be unprecedented; and the crop will exceed that of 1880 if the section escapes the hot north winds of May and June that usually catch the grain in the "dough." A bountiful supply of March rain greatly favored the Sacramento and San Joaquin Valleys, where it was much needed. If all is propitious, Secretary Smith thinks the yield of wheat will exceed by 60 per cent. that of last year.

The April returns to the Department of Agriculture place the winter wheat area at about 27,600,000 acres; this is about the breadth sown last year, of which over 5 per cent. was plowed up, leaving 26,400,000 to be harvested. So that the present is that much an increase of last year's winter wheat area, and 2,000,000 acres more than in the census year. An increase in the Pacific coast is reported of about 1,500,000 acres, and nearly 750,000 in the Southern states; there is a small increase in the Middle states, and a slight decrease in the Ohio basin. The average condition of the crop is 95 where 100 represents a full stand of unimpaired vitality, and medium growth. In April, 1883 and 1882 these averages were respectively 80 and 85; the large crop of 1882 averaged 104. The highest averages reported now are 102 in Oregon and Maryland; in California and Kansas, 101; Virginia and Connecticut, 100; Arkansas with 81 stands lowest. No serious winter killing is reported except in Alabama. The superior condition of drilled wheat is universally acknowledged. The area of rye is nearly the same as last year, being 99 per cent., and the average condition is 97.

OUR GRAIN PRODUCTION.

A correspondent of the *Chicago Tribune*, treating of the "grain problem" in reference to a prevalent idea that we have been making excessive additions to the acreage and amount of our grain production, presents the following opposing facts: From the figures of the last census and the estimates of the Department of Agriculture, the total wheat acreage of this country during the five years 1879-83, respectively, were estimated at 35,430,333, 37,986,717, 37,709,020, 37,067,194, and 36,393,313 acres. So that the increase last year was only 963,000 acres over that of 1879, or 2½ per cent.; while our population had increased 13½ per cent., or 6,600,000 in number. This would have required, at the usual per capita estimate, an increase of about 30,000,000 bushels; while based on the yield of 1879, it could only have been 13,000,000 bushels. But the actual yield was much less; the production of the years named in millions having been respectively, in 1879, 459; 1880, 488; 1881, 380; 1882, 504; 1883, 420; thus the yield of last year's larger acreage was 39,000,000 bushels less than in 1879.

Col. W. M. Grosvenor's elaborate calculations, based on fifteen years' reports, place the average consumption of wheat per capita at 4.417 bushels. On this basis the requirements of our population during the above years in millions would have

been respectively, in 1879, 218; 1880, 225; 1881, 233; 1882, 240; 1883, 247; leaving for seed and export respectively, 241, 273, 147, 264, and 173 million bushels. Thus, if the acreage sown this year should be no greater than in 1879, we have 28 per cent., or 68,000,000 bushels less surplus to export from last year's crop of wheat than in 1879. The surplus left over from the exceptional crop of 1882 accounts for the actual state of the markets.

The advice recently given to increase our crops of other cereals, has been already acted on by producers in many states. For, as we have seen above, while the wheat acreage of the Northwest and the Pacific slope increased greatly the aggregate increase was really very small, and relatively below zero. But the corn acreage increased in the five years named from 62,369,000 to 68,300,000 acres, or nearly 10 per cent.; that of oats 19 per cent., or from 16,145,000 to 19,200,000 acres; and the total acreage of cereals, other than wheat, from 83,235,000 to 92,100,000 acres, or 10½ per cent. Our increase in oats and corn has thus been 8,865,000 acres.

The following table shows the comparative increase during the years named of the acreage of wheat and corn in the states better adapted, in whole or in part, to the latter:

	WHEAT.		CORN.	
	1879.	1883.	1879.	1883.
Kentucky.....	1,160,108	1,248,390	3,021,176	3,258,410
Ohio.....	2,556,134	2,588,400	3,281,923	2,818,480
Indiana.....	2,619,695	2,735,370	3,678,420	3,541,482
Illinois.....	3,218,542	2,215,000	9,019,381	8,151,463
Wisconsin.....	1,948,160	1,593,500	1,015,393	1,122,826
Minnesota.....	3,044,670	2,597,940	438,737	727,155
Iowa.....	3,049,288	2,435,300	6,616,144	6,980,621
Nebraska.....	1,469,865	1,772,990	1,630,660	2,813,303
Missouri.....	2,074,394	2,358,350	5,588,265	5,878,364
Kansas.....	1,861,402	1,534,350	3,417,818	4,708,473
Total.....	23,002,258	21,079,590	37,707,917	40,000,577

In Wisconsin and Minnesota, only the southern portions of which are adapted to corn, wheat predominates. There was a large increase of wheat acreage in Nebraska and Missouri, but the increase in corn acreage was much greater. There was a decrease of nearly 1,000,000 acres both of wheat and corn in Illinois; while the wheat decrease of 614,000 acres in Iowa was offset by only 364,000 in corn. The following table gives the same facts relative to the four named special wheat sections:

	WHEAT.		CORN.	
	1879.	1883.	1879.	1883.
Dakota.....	265,298	1,008,000	90,852	270,058
Washington.....	81,554	170,200	2,117	2,672
Oregon.....	445,077	793,300	5,646	5,504
California.....	1,832,429	2,794,000	71,781	100,607
Total.....	2,624,358	4,767,500	170,396	378,841

In these states the increase in wheat acreage since 1879 has been over 2,000,000 acres, or more than 80 per cent., and more than offsets the decrease in the corn states. The ratio of these products in the latter states last year was 190 acres of corn to 100 of wheat; in the other states the ratio was 1,260 acres of wheat to 100 of corn. The southeastern part of Dakota has a few corn-producing counties, but there is many a county in Illinois that produces more corn annually than all four of these states. There were four counties in Illinois that in 1879 produced more than 10,000,000 bushels of corn; the aggregate of these counties last year was only 7,560,000 bushels. The above figures do not indicate the total increase of our agricultural products. In oats alone Minnesota, Kansas, and Nebraska increased their production from 8,632,656 to 11,443,052 bushels, or 32½ per cent., and there has been in these states a large increase of corn, and consequently of meadow and pasturage; so that it appears that in these sections, where there is much incentive to other agricultural production, farmers generally have reduced their wheat crops and increased others. Should low prices in wheat continue to rule—which is by no means proven by the present situation—the European demand will increase for our meat and cotton, for what the laborer saves in bread he will spend on meat and clothes.

THE LESSON OF LOW PRICES.

The practical lessons to be learned from the present decline in our wheat exportation, and its prevailing low prices, as well as the forecast of the future prospects of this traffic, are graphically presented by the *New York Mercantile Journal*, in a notice of the published views on this subject of Mr. H. A. Pierce. The latter says that the United States is no longer the agricultural mistress of the world, a claim which, in our strenuous efforts at demonstration, has invited active competition on the part of countries not addicted to speculation, who now undersell us in the foreign markets. The large factor in this fatal price, the writer claims, is the cost of speculation with its army of operators and brokers, added to the legitimate cost of production and transportation, which gives the advantage to our successful competitors. According to Mr. Pierce the question, Can we produce wheat at a less cost than the rest of the world, or its alternative, Shall we lose our commanding position in its grain markets? has a threefold reply as to methods, viz.: To cease speculation in produce; to quit raising a surplus for export; or to be satisfied with lower prices.

In commenting on this the *Journal* admits the evident effect of speculation in enhancing prices, illustrating it by the increased prices of coffee and tea since they have been included in option dealings, while other conditions relative to their value should have produced a reverse effect. But "we are a nation of born speculators," and in spite of its evil effects speculation is bound to increase. The rapid advance in the extent of these ventures in the amount of capital employed and the number of articles subjected to its sway, is conclusive evidence of the correctness of this prediction.

The second alternative, to sustain values by reducing the home crop, is met by the fact that no such methods are ever deliberately entered upon by vast numbers of producers. There is no effectual argument in this direction but the actual meeting of the stubborn fact of profitless production, leading to the voluntary abandonment of wheat-growing for some industry of better promise. But here we meet the question, are not our resources in land, labor, skill, etc., more than sufficient to supply our requirements? With every new successful appliance for saving labor these potencies are increased. If grain culture is abandoned, labor must seek its fields elsewhere; for, excepting cotton, there are no agricultural products but are liable to the same vigorous competition that wheat is now meeting. Leaving the plow for the factory, the laborer hears the persistent and increasing demand of American manufacturers for protection, in order to enable them to successfully meet foreign competition in our home markets. Whether such a policy as shall wall in this country from all commercial foreign relations, except in such articles as we cannot produce, may be desirable, is a question that only the most bewildered doctrinaire would seriously present.

The third alternative, that we must accept lower prices, leads to a survey of the present relative condition of our wheat market. The following figures present at a glance the average annual prices per bushel of No. 2 wheat in Chicago markets for the past five years:

	1879	1880	1881	1882	1883
Dollars.....	.99¼	.96½	1.15¼	1.17½	.98½

Notwithstanding the average price was so low last year, we have been unable to dispose of our surplus grain. On March 22 our visible supply was 29,000,000, against 22,000,000 bushels at that date in 1883; while it was only 12,000,000 in 1882. The writer concludes from these facts that high-priced wheat, and a monopoly of its sale in European markets, are at an end; and that in some way we must adjust ourselves to these conditions of the world's markets that are governed by other agencies.

The wisdom of Capt. Cowden's "outlet" plan, for preventing floods on the lower Mississippi, is thought to have been fully demonstrated in the late overflows. The waters had been rising until

they had reached about to the top of the New Orleans levee, when a newly-constructed mud bank at Bayou Sara gave way; the effect was a fall of from three to five inches in thirty-six hours at the former place, while at Vicksburg and other points above the water was still rising.

OUR GRAIN EXPORTS.

The report of the Treasury Department as to our exports of cereals, exclusive of corn meal and wheat flour, for periods of one month and nine months ended March 31, 1884, compared with the same periods of 1883, are tabulated as follows:

TOTAL GRAIN EXPORTS FOR MARCH.

GRAIN.	1884.		1883.	
	BUSHEL.	VALUE.	BUSHEL.	VALUE.
Barley.....	41,086	\$ 22,197	41,585	\$ 31,541
Corn.....	3,485,669	2,061,640	8,193,829	5,638,189
Oats.....	43,479	23,603	19,753	11,834
Rye.....	330,604	246,980	83,620	64,517
Wheat.....	4,250,385	4,387,514	6,158,652	7,265,088

TOTAL GRAIN EXPORTS FOR NINE MONTHS ENDED MARCH 31.

GRAIN.	1884.		1883.	
	BUSHEL.	VALUE.	BUSHEL.	VALUE.
Barley.....	408,137	\$ 259,915	329,873	\$ 235,463
Corn.....	34,819,834	21,202,411	22,879,029	15,189,360
Oats.....	429,527	182,424	224,848	126,935
Rye.....	4,326,888	2,979,764	994,603	754,046
Wheat.....	53,403,836	57,843,181	94,459,059	106,193,309

CONSUL ROOSEVELT reports that the import trade in grain, of Bordeaux, has increased 63 per cent. in six years, amounting in value to about \$8,000,000 per annum. The ratio to the grain imports of France, which was $2\frac{1}{2}$ per cent. in 1877, is now 7 per cent. This increase is said to be mainly due to the establishment of a line of steamers to that port from New York, furnishing quick, direct, and convenient transportation to shippers and merchants. The following facts are in evidence: In 1877 the total value of cereal imports at Bordeaux was \$1,276,984; in 1882, after the establishment of the above line of steamers, it was valued at \$7,653,048, or an increase of 500 per cent. in six years.

JUDGE COLLINS has rendered a decision for the plaintiff in the case of J. H. Rhodes, of Little Falls, Minn., vs. the Northern Pacific Railroad, a test case made up in behalf of several wheat litigations against defendants, based on the refusal of the company to furnish cars to plaintiff for shipment from his private warehouse, requiring him to use the elevators. The fact was admitted, but the defendants rested their case on the statute regulating the storage and shipment of grain. The ground of the decision was that the elevator in question did not fulfil the requirements of the law, and it did not settle the real point in issue whether the company would or not be obliged to furnish cars provided the elevators did fulfil these requirements. Mr. Rhodes obtained his \$80 damages because Mr. Sawyer did not manage his elevator legally.

At Watertown, Dak., recently, Assistant General and Division Superintendents Sanborn and Oliver, General Freight Agent Hollenbeck, and Engineer Blunt, of the Winona & St. Paul Railroad, with G. W. Van Dusen, elevator owner, met the farmers of that county for the purpose of listening to their complaints as to grading and rates. Mr. Sanborn announced the willingness of the company to right any actual wrongs. After the farmers' meeting in February they had, unasked, lowered the rates two cents per hundred from Watertown. Subsequently an investigating committee of two were appointed by the farmers, well known local politicians, who, Mr. Sanborn says, suppressed the facts in their reports, untruthfully charging the company with outrageous rates. The Milwaukee Company were giving rebates to local buyers on their line, causing grain to go higher; to protect themselves, the Northwestern cut the freight rates five cents a hundred for all shippers from that county for a period of two months. Mr. Sanborn stated the present rates were as low as they could be made

to pay the company for its work. He asserted that he was heart and hand with the farmers, and was willing to do all that possible for their present and future interests. Mr. Van Dusen offered to turn over to the farmers his elevator and warehouse if they could thereby secure better prices, provided they would pay him one cent per bushel on grain shipped.

THE "wheat problem," which is one of general interest, is especially so to the Pacific Coast, in whose production and foreign traffic it has become the most important factor. The San Francisco *Post* is by no means disposed, however, to take a pessimistic view of the case, based on the present unexpected and unusual depression, and cites these facts by way of encouragement: The reason, just come to light, given for the present dark outlook is that the English government are paying a subsidy for wheat transportation from India and Australia. Up to date this year 40,000,000 bushels less of last year's wheat surplus has been exported from this country than was expected, while India has increased her exports of wheat from 2,000,000 bushels in 1879 to 36,000,000 in 1883; and this is considered to be but the commencement of the effects of the policy of England in improving this source of supply. But as an offset in a broader view, the writer states that in 1883 the total wheat crop of the United States was 504,000,000 bushels, and its exports 106,000,000, or one-fifth, 65,000,000 bushels of which, a little over one-half, went to Great Britain. Its complete cessation, therefore, would amount to a loss of only \$70,000,000, or less than ten per cent. of the aggregate value of our total exports for 1883. Such a variation in the value of our foreign traffic, says the *Post*, has often occurred with no serious effect upon the general interests of our trade. So that the worst forecast of the future as to this trade is no cause for a serious scare relative to India wheat or British protection.

ELEVATORS IN MANITOBA.

We pointed out in a late issue that the solution of the grain handling problem lay in the establishment of a public storage system of elevators, operated for the benefit of farmer, grain merchant and miller alike, but founded on a basis perfectly independent of any of these interests. Looking at this matter from all points of view we have come to the conclusion that such a system should be centered in Winnipeg. Being the capital of the Province all railway lines converge at that point, there all the banking, insurance and shipping facilities exist for doing thorough justice commercially to the business, while as a distributing center the city offers the greatest advantages.

Grain stored in Winnipeg can be shipped south or east as markets may offer inducements. The opening up of the Hudson's Bay route will be another argument in favor of Winnipeg, as grain can be carried during the summer fully half the distance by water to the seaboard. The removal of the obstructions at the St. Andrew's Rapids would make Winnipeg the head of lake navigation, where the grain from the barges from the upper waters of the Red River and the Assiniboine would be transferred to the barges bound for the head of Lake Winnipeg.

Adequate elevator facilities must exist at Port Arthur, and at Churchill or Port Nelson, and intermediate centers such as Brandon and Portage La Prairie, will naturally spring up. A grand central system must, however, be secured which will be the grain center of the Canadian Northwest, just as Chicago is the grain center of the Western states. With such a center established in Winnipeg a Northwestern grain market would be established and buyers from all markets would settle at that point to purchase. Values would be established, grades fixed, and farmers would know every day exactly what their products would bring. Feeders for this central system would spring up at every railway station and steamboat landing, and through such a system the grain would become the moment it reached the elevator a purchasing power, whether sold or stored. It looks as if we had begun at the wrong end. We trust to see a warehousing company formed this coming season whose business it will be to erect an elevator in Winnipeg of one million bushels capacity, and who will handle the grain simply as the storekeepers, having no direct interest in the grain trade as such, but supplying the facilities which will enable the farmer and miller and grain dealer to transact their business in the cheapest and most expeditious way for the benefit of all.

At present we have a grain country without a proper grain market. The work as now carried on is expensive and unsatisfactory to all concerned. Let us hope that the present year will see our grain trade founded on a solid basis. Until this is done we cannot hope for satisfactory results.—*Northwest Farmer*.

[For the AMERICAN ELEVATOR AND GRAIN TRADE.]

"THAT FIELD OF KANSAS CORN."

BY "H"—A REPLY TO THE POEM IN OUR LAST ISSUE.

A farmer leaned on a wayside fence,
A picture free from care,
While near was a field of Kansas corn
That had grown in luxury there.
Had the breeze that fanned that sunburnt cheek
And tangled his silvery hair
Been seeking a happy, contented face,
It would surely have found it there.

"It was planted," said he, "on fall-broke ground,
On the very first day of May,
And was up, and harrowed, and rolled
Before Decoration Day;
And of all the promising prospects
I've seen since I was born,
There was none that ever equaled
That field of Kansas corn.

"By the last of June it was eight feet high,
And growing with all its might,
And sending out brace roots all around,
With everything looking right;
And, somehow or other, near August,
We thought it a little queer,
But over that whole blessed cornfield
The ears began to appear.

"And still it kept on growing
As if in a tropical clime,
With only a day before it,
Instead of six weeks of time.
It was ripe by the first of September,
And out of the way of the frost,
And of all that field of Kansas corn
Not a single ear was lost.

"That corn was shipped all over the world—
To the east, north, south and west,
And of all the corn that was raised that year
That Kansas corn was the best.
And when the floods in the Eastern states
Left the people hungry and sad,
That thirty-one cars of Kansas corn
Was not so very bad!

"The man who had watched all summer long,
And graded it Number 2,
Found when he shipped it north or south
Reports he had heard were untrue.
He found that Kansas was far ahead,
That she never could be outdone,
For the corn that he shipped, no matter where,
All graded Number 1.

"Then, hurrah for glorious Kansas,
And her fields of wheat and corn.
You never have seen such a state as this
Since the day that you were born.
There is room for many another here,
And you'll starve, 'yes in a horn,'
There's plenty to eat, and it cannot be beat
If it's only 'Kansas corn.'"

A SATIRICAL CIRCULAR.

Some one has issued a bogus circular satirizing the Exchanges, under guise of being a prospectus of a new Exchange. The references to Dan Talmage's Sons are suggested no doubt by their opposition to the way most Exchanges are conducted. The circular says:

"The great and growing rice interest of the world has now attained a prominence which necessitates for its operation on a large and comprehensive scale a common center for information for the transaction of business therein. As all well-informed persons are aware there is nothing like rice in all the world; its importance is second to none—in point of fact, it far outranks as a production not only any single cereal, but is greater than all combined" (vide Talmage).

"In the proposed organization there will be only 100,000 shares, at \$10 each; with annual dues of \$5 each. As will be noted, the shares and annual dues have been put at a minimum rate, the sole and philanthropic object of this institution being to secure 'the greatest good to the greatest number.' In order to further secure this just and popular object it is proposed to limit ownership of stock to 100 shares, and to compel all ballots to be cast by owners of stock in person, thus guarding the institution from the throttling hand of the monopolist. It may be further remarked that there is 'but one price,' so that no charge can be made against this, as has been against similar institutions, i. e., that by 'thimble rigging' the projectors got their seats and position 'without money and without price.' There will be no favored class, and hence no permanent organization will be effected until three-fourths of the shares shall have been taken up. It may here be remarked that many of our largest merchants have not only subscribed for the full number of shares allotted to any single man, but have also subscribed in behalf of their children and grandchildren who are yet minors, deeming the opportunity an unusual one for a safe investment with prospects of large returns. Operators on the Exchange will have to be registered owners of at least five shares of stock.

"Margins will be placed at the minimum, so as to put speculation within the reach of the humblest cash boy in the land. An important feature, which must certainly commend this Exchange to persons of limited means, is its liberal provisions in the way of life insurance. Each owner of stock will have insurance at the rate of \$1,000 per share without any additional charge to the annual dues. Further, a guarantee will accompany each share that the same shall double in value with each decade. In addition to the foregoing, there will be other trifling features, such as the library, restaurant, smoking rooms and the tonsorial departments, all of which will be open from 8 A. M. to 6 P. M., and free to all subscribers and their friends, until a permanent organization can be effected. Mr. John Talmage, of Messrs. Dan Talmage's Sons, has kindly consented to record the names of subscribers.

Subscriptions may therefore be sent to New York, Charleston or New Orleans."

REPORT OF THE NATIONAL DEPARTMENT OF AGRICULTURE.

April returns to the Department of Agriculture make the winter wheat area about 27,600,000 acres. This is nearly the breadth sown of the previous crop, of which between 5 and 6 per cent. was subsequently plowed up, leaving 26,400,000 acres to be harvested. Comparing with the area harvested the present breadth is an increase of 5 per cent. The present area is greater than that of the census-year by more than 2,000,000 acres. There is an increase of about 1,500,000 acres on the Pacific coast, and nearly 750,000 acres in the Southern states. There is a small increase in the Middle states and a slight decrease in the Ohio basin. The condition of wheat averages 95-100 representing a full stand of unimpaired vitality and medium growth. In April, 1883, the average was 80, and 85 in April, 1881. The April average of the large crop of 1882 was 104. State averages are as follows: Connecticut, 100; New York, 97; New Jersey, 95; Pennsylvania, 99; Delaware, 96; Maryland, 102; Virginia, 101; North Carolina, 102; South Carolina, 97; Georgia, 91; Alabama, 88; Mississippi, 92; Texas, 101; Arkansas, 81; Tennessee, 98; West Virginia, 100; Kentucky, 90; Ohio, 98; Michigan, 94; Indiana, 92; Illinois, 92; Missouri, 91; Kansas, 101; California, 101; Oregon, 102. In Michigan, New York and Connecticut the fields were protected with snow the 1st of April, in some places a foot deep. Subsequent condition will depend on the weather of April. No serious winter killing is reported except in Alabama. On low and wet areas some injury is reported throughout their entire breadth. The superior condition of drilled wheat is attested almost without exception.

The area of rye is nearly the same as last year, the average being 99 per cent. Its condition averages 97 per cent.

The report also gives a statement of farm animals, estimated losses the last year and estimated proportion of high grade animals, and the money value in improvement by breeding in several states.

AVERAGES BY STATES.

The following shows the average condition of the several crops named by states:

	Indiana, per cent.	Illinois, per cent.	Ohio, per cent.
Wheat, per cent. of average crop sown.....	95	89	97
Wheat, per cent. of condition.....	86	69	84
Clover, per cent. of condition.....	82	78	82
Timothy, per cent. of condition.....	95	95	97
Apple buds, per cent. alive.....	82	83	79
Peach buds, per cent. alive.....	11	6	10
Rye, per cent. of average crop sown.....	79	72	70
Rye, per cent. of condition.....	89	88	91
Barley, per cent. of average crop sown.....	71	95	38
Barley, per cent. of condition.....	87	85	87
Horses, per cent. of condition.....	97	97	91
Cattle, per cent. of condition.....	95	98	90
Hogs, per cent. of condition.....	94	94	90
Sheep, per cent. of condition.....	92	88	92

Special Notices.

The Chicago Scale Co. sell Scales of all kinds also Portable Forges and Blacksmiths' Tools of all descriptions at about one-half usual prices. Buyers will save money by sending for their Price List.

Elevator Men—Howes & Ewell, of Silver Creek, N. Y., make a full line of wheat cleaning machinery. Read their advertisement on first cover page.

To Whom it May Concern

All persons are advised, before paying money to James M. Harper, or anybody else, for alleged infringements on PATENT GRAIN DUMPS, to

WRITE TO

R. M. McGRATH, ESQ., Lafayette, IND., —OR— HON. A. J. BELL, Attorney at Law, Peoria, Ill.

R. JAS. ABERNATHEY,

General Agent for the Barnard & Leas Mfg. Co. for Kansas, Western Missouri and Southern Nebraska. Address.

Box 880, KANSAS CITY, MO.

UNSOLICITED AND POINTED.

GLASCO, KANSAS, January 4, 1884.

Barnard & Leas Mfg. Co., Moline, Ill.:

GENTLEMEN—After having used your Victor Corn Sheller and No. 1 Improved Corn Cleaner in our elevator for some six months, we wish to congratulate you upon furnishing the ne plus ultra of Corn Shellers and Cleaners.

We have never used the equal of the machines you furnished us. They do their work to our entire satisfaction.

Very respectfully yours,

W. R. WEST & CO.

BALTIMORE, MD., January 29, 1884.

Barnard & Leas Mfg. Co., Moline, Ill.:

GENTLEMEN—Your draft in payment of No. 3 Warehouse Separator and Grader purchased of you, was presented several days ago, and paid. The machine gives us great satisfaction, and we unhesitatingly say that we believe it to be the best one in the market for cleaning and grading all kinds of grain. We shall take pleasure in recommending it to any one wanting such a machine. Our only regret is that we did not get one of double the capacity. Very respectfully,

SWIFT & LUCY.

SITUATION WANTED.

As buyer for a grain dealer, by a young man thoroughly acquainted with the business, and fully competent to run an elevator. Can furnish \$500 to put into the business if wanted. Address

S. C., care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

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FOR SALE CHEAP.

A new Seeley Elevator complete, in Western Iowa, in a splendid grain country. Capacity of Elevator, 20,000 bushels. Best reasons for selling. Address

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Of 10,000 bushel capacity. On the Lake City Branch of the Chicago & Northwestern Railroad. Good grain, coal, and stock business. Horse-power. Price, \$1,200. Address

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I offer my warehouse, office, scales, and coal bins for sale. Situated in a grain country. Warehouse has a capacity of 5,000 bushels. Have a fair trade in coal. Good reasons for selling; made known on application. For prices, etc., address

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PARTNER WANTED.

In a mill and elevator business in Kansas. Both mill and elevator are nearly new and thoroughly equipped. Splendid grain country. Have too much to attend to, and want a partner. No better chance anywhere offered, to the right kind of a man. Address

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Seed Corn in Ear or Shelled. Prompt Shipments.

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Prompt Attention given to any business intrusted to our care.

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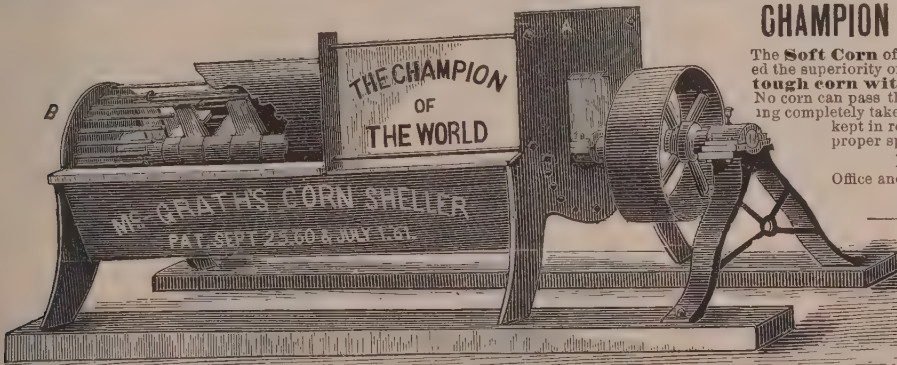
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The **Soft Corn** of this year has again demon-
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No corn can pass through this Sheller without be-
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kept in reasonable repair, and run at the
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R. M. McGRATH,

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McGrath's Twin Corn**Sheller and Cleaner.****McGrath's Pat. Grain****Dump. Also Shafting,****Pulleys, Hangers and****Warehouse Machinery****of every description.****DETROIT LUBRICATOR CO.'S**

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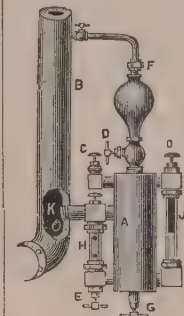
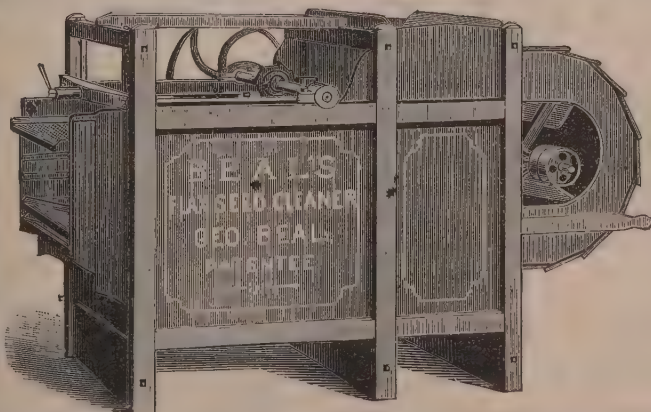
For oiling valves and cylin-
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Through the Steam Pipe.
The oil passes in Sight, drop
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LUBRICANT, oiling perfectly
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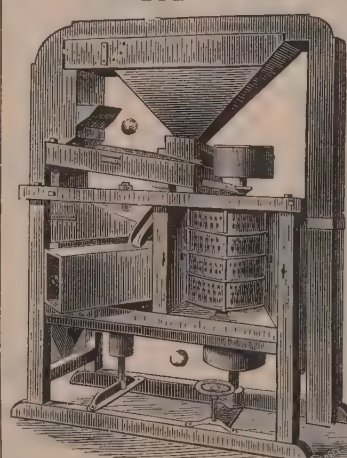
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Should be in Every El-
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CLEANS & POLISHES**THE GRAIN,**

Removing all impurities with-
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Made Especially for this Trade

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We Build Engines and Boilers from 4 to 100 Horse-Power. Can Completely Equip an Elevator with everything from Engine to Belts, Bolts, Cups, Boots, Etc., Etc., Etc.

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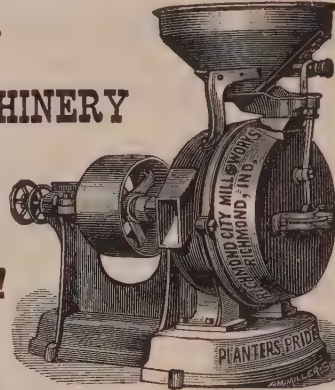
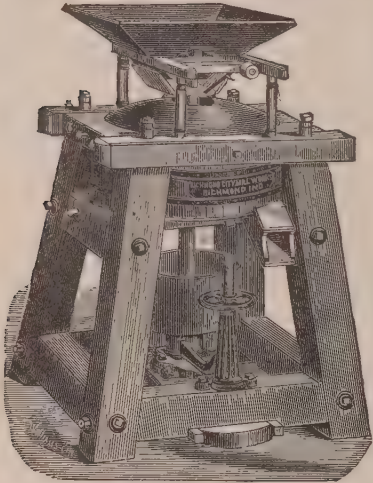
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Of Every Description,

THE BEST MADE!

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For Boilers, Steam, Gas and Water Pipes,

Prevents Condensation of Steam and Radiation of Heat.

Awarded the Silver Medal at the late National Exposition of Railway Appliances, being the highest and only prize given.

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Your California Scourer and Separator pleases us. It is first-class. It does its work well. It is the best machine to Scour and Clean Barley we have ever seen. Our engine is 10-horse power and will easily run two machines like it, Fanning Mill and Elevator. We would recommend it for Warehouse purposes ahead of all other machines.

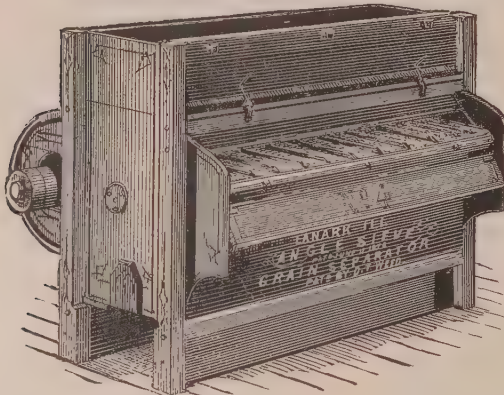
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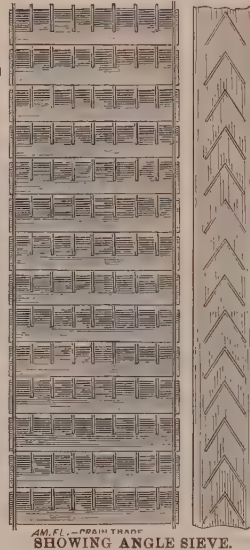


Everybody is astonished to see the work it does. We challenge competition, for general cleaning purposes. We CAN and WILL separate oats and wheat raised together, the first time through the Separator, and make it fit for market, and not run any wheat over in the oats. No other Separator can help running wheat over, where the suction or blast is depended on to make the separation, which we claim is not the correct principle of separation. The peculiar construction of the sieve, and the motion of it, do the work. We can take oats out of barley just as well, though not quite so fast. No other Separator attempts to do this. We can also clean buckwheat, flax, rice or any any other small seeds that any other separator will handle.

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JOHNSON & FIELD,

MANUFACTURERS OF THE

Dustless GRAIN Separator

EMBODIES MORE POINTS OF EXCELLENCE

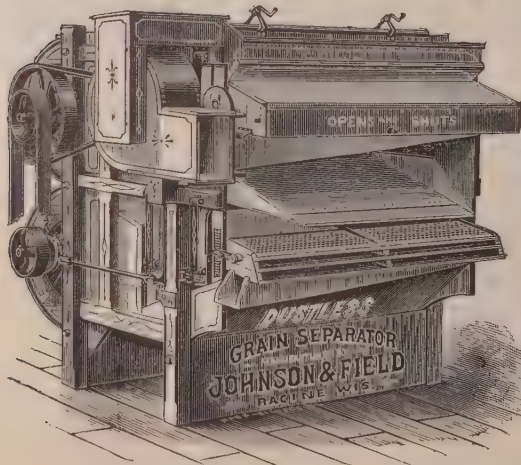
Than any other machine now offered for similar purposes. Light Running. Large in Capacity. Perfect in Separation, and with great Strength and Durability.

These machines have no equal. Adopted and Indorsed by many of the largest mills and Elevators in the country.

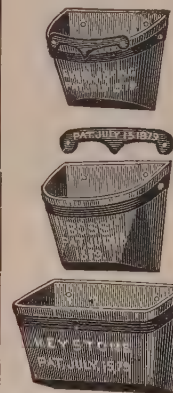
AS A GRADER IT HAS NO EQUAL.

Made in Different Sizes to Suit Different Requirements. Send for Circular, with Testimonials and Prices. Address

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Manufactures three of the best elevator buckets on the market. The "Everlasting" is round faced, no corners to catch; superior carrying and emptying capacity, with patent malleable iron lip. Outwears any bucket in the market. The "Boss" has an oval front and square bottom. Light, strong, and durable; lip can be attached if desired. The "Keystone" is as near perfect as a square cup can be. The corners are rounded, with double bottom, and substantially made. Prices as low as ordinary buckets. Best of testimonials. Sold to mill furnishers generally. Order from your furnishers or of us direct. They pack closely. Elevator Bolts at manufacturers' prices.

The Everlasting Elevator Bucket Co., TERRE HAUTE, IND.

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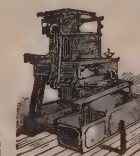


Sent by mail postpaid to any part of the United States on receipt of price as follows:

No. 0...	1 oz...	\$.65	per 100.
No. 1...	2 to 3...	.85	" "
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For full sized illustrations, and agencies, see American Miller for May, 1884.

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"MOORE COUNTY GRIT"

Corn-Mills and Millstones, ALL SIZES.

THE BEST IN THE WORLD FOR TABLE MEAL!

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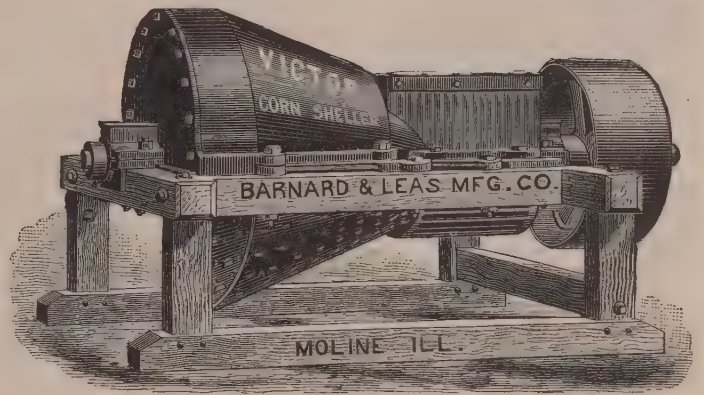
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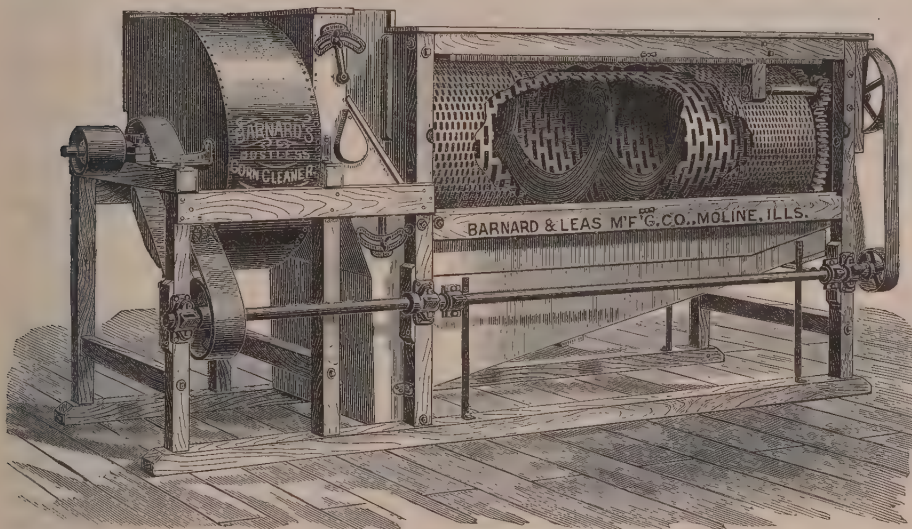
WITH DOUBLE SCREEN AND SHAKER
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DUSTLESS WAREHOUSE SEPARATOR.

Dustless Elevator Separator.



Corn Sheller.



Corn Cleaner.

THE LATEST IMPROVED
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VERY BEST!
MACHINES
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On Earth.

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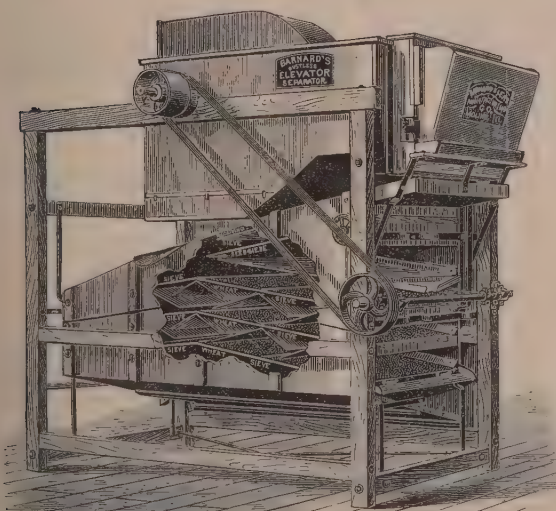
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MACHINERY

OF ALL KINDS.

*Iron Elevator Boots, Wagon Dumps, Swivel and
Crane Spouts for head of Elevators
and Hoppers.*

Shafting, Pulleys, Hangers, Belting of all kinds, Link Chain
Belt, Sprocket Wheels, Wire Rope, Sheaves,
Elevator Buckets, Bolts.



Improved Elevator Separator.

Send for Circulars.



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Grain Elevator Machinery, and Supplies of every description, such as: Wagon Dumps, Horse Powers, Corn Shellers, Fanning-Mills, Feed-Mills, Wood and Iron Elevator Boots, Crane Spouts for Head of Elevators, Swivel Spouts for Hopper Bins, Shafting, Pulleys, Hangers, Belting Buckets, and Bucket Bolts.

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Including the Modeling, Construction and Management of Steam Engines and Boilers, with valuable Illustrations. By Sy Stephen Roper, Engineer. Thirteenth edition, revised and enlarged; 12mo., tucks, gilt edge..... \$2.00

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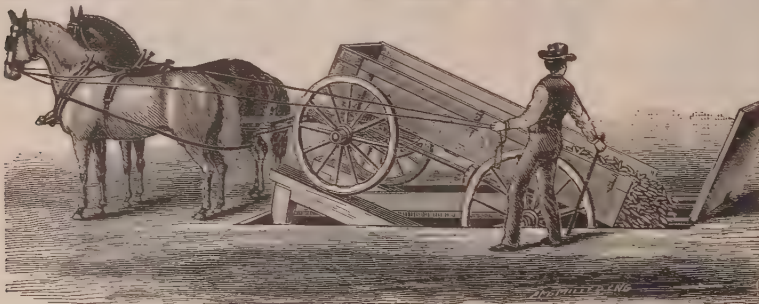
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Mills, Elevators, Warehouses, Engine and Boiler Rooms, Cooper Shops, Barns, Offices or Dwellings. Is Light, Durable, practically Fire-proof, easily put on, and cheap. Samples and Prices free.

The Bodine Roofing Co., - - - Mansfield, Ohio.



The above cut is a fair representation of the Rail Dump in common use, on which we are collecting a royalty for past use, and licensing parties to continue to use and also put in New Dumps. Our patents on Rail Dumps fully cover this class of Dumps. Any one using Rail Dumps can readily decide by comparing his Dump with this cut, whether he infringes or not. We also control patents that cover Platform Dumps. Our prices are reasonable in settlements for past infringements, and for licenses to continue to use the Dumps. Prices given on application. See notice below.

NOTICE.

To Parties Using Grain Dumps.

Notice is hereby given that we have been retained to prosecute infringers of the following Letters Patent on Grain Dumps:

One granted to Noah Swickard, Oct. 13, 1868, No. 88,005. Reissued Dec. 20, 1870, No. 4,212, for Improvement in Wagon and Car Unloading Apparatus.

One granted to Samuel C. Kenaga, Oct. 20, 1868, No. 83,288, for Improved Dumping Platform.

One granted to Benjamin Walton, Nov. 31, 1869, No. 97,252, for Improved Dumping Machine, and

One granted to Wm. M. Hall, Sept. 6, 1870, No. 107,040, for improvement in Grain Dumps, and all persons or parties manufacturing or using Grain Dumps which infringe on any of the above described Patents must make settlement for all past infringements, and take license in accordance with the usual terms, if they desire to continue to manufacture or use the same, or legal steps will be taken to enforce said Patents against all infringers.

Applications for licenses for using said patented improvements, and for settlement for past infringements should be addressed to

J. M. HARPER, New Opera House Building, Peoria, Ill.

BURNET & BURNET,

Complainant's Counsel, Cincinnati, Ohio.

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\$1 per Year. Address MITCHELL BROS. CO., Chicago.

UNION FOUNDRY AND PULLMAN CAR WHEEL WORKS,

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ELEVATOR MACHINERY, STEAM SHOVELS,

Buckets, Building Materials,

And all Iron Work used in Elevators. Dealers in PAPER FRICTION PULLEYS. Correspondence Solicited and Estimates Furnished.

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Mills, Elevators,
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IT DOES

CLEAN WORK!

—AND ALLOWS NO—

MIXING OF GRAIN!

MANUFACTURED BY THE

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16 West Lake Street,

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IT CARRIES

Grain,
Seeds,
Ear Corn,
Wet or Dry Malt,
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Sand,
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Tan Bark,
Stone,
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Clay,
Bricks,
Boxes,
Blocks,
Packages,
Etc., Etc.

SEND FOR CIRCULAR AND PRICE LIST.

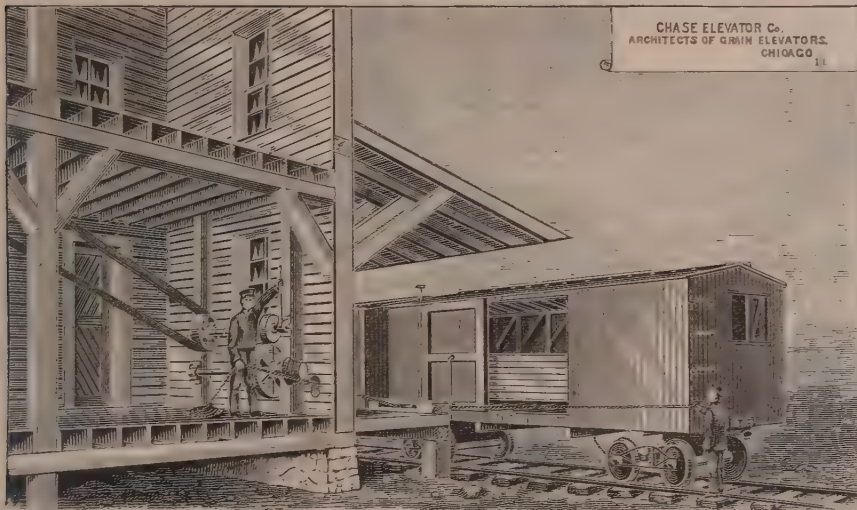
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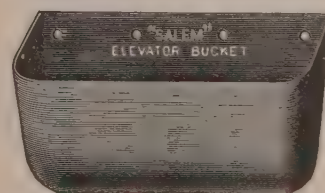
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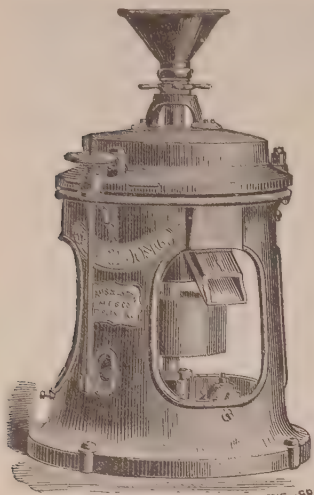
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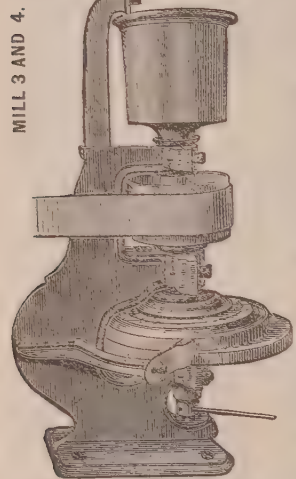
Nos. 2 and 5 Mills Grind the Following Dry Substances:
Raw Bones, Burnt Bones, Pot Shells, Ores, Flint Quartz, Enamel, Old Crucibles, Charcoal, Plaster, Fire Clay, Aluminous Clay, Paints, Guano, Feed, Corn, Corn and Cob, Tobacco, Snuff, Sugar, Starch, Salts, Woods, Stems, Berries, Seeds, Leaves, Roots, Coffee, Spices, Mustard, Cocoanut, Cocoa, Oil Cake, Gums, Tomatoes, Fish, Leather, India Rubber, Mica, Asbestos, Cork, Horn, Celluloid, Beef Fibre, Confectioner's Sugar, Chemical Salts, Johnson's Fluid Beef, Fehsen Safety Blasting Powder, etc.

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Such as Paints in Water, Oil or Varnish, Printer's Ink, Paste, Blacking, Starch, and other moist compositions.

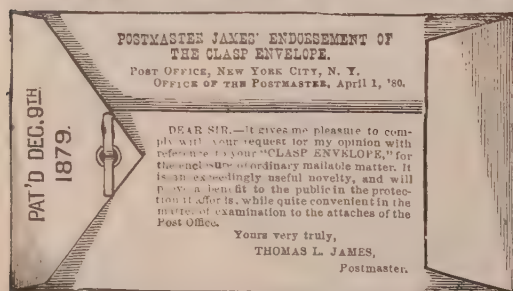
Many substances above mentioned
CANNOT BE GRIND BY OTHER MILLS,
As the peculiar motion of the plates causes them of themselves to discharge the ground substances, which would choke other mills.

The Mills will do a much larger amount of work than any other Mills in a given time.

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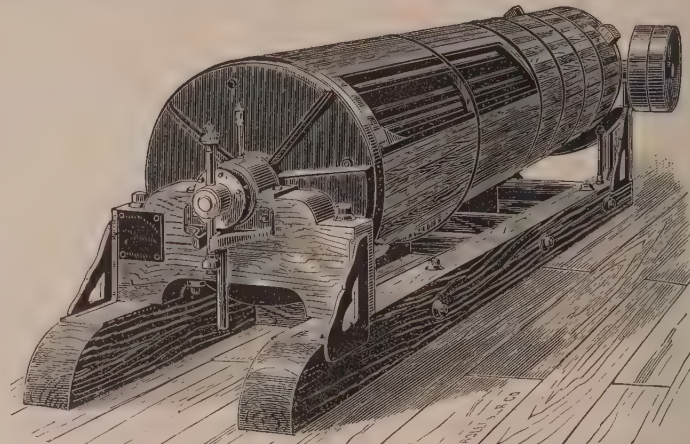
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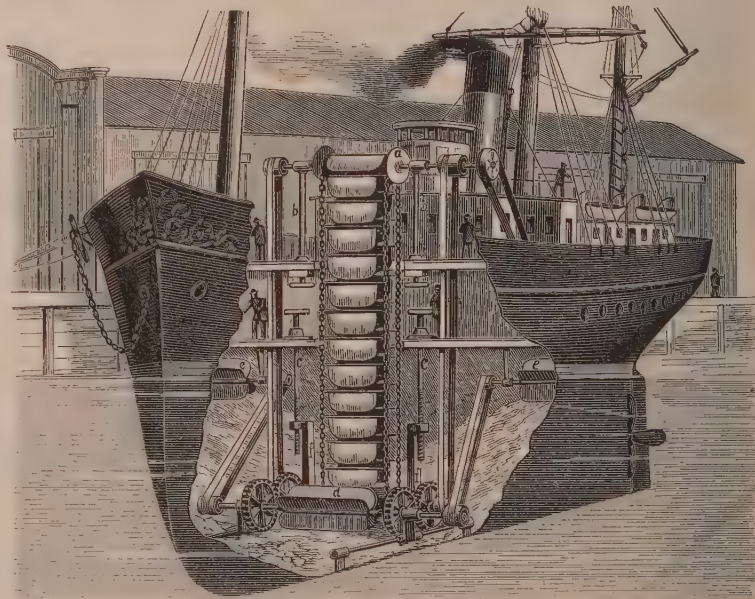
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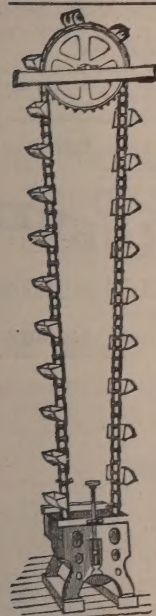
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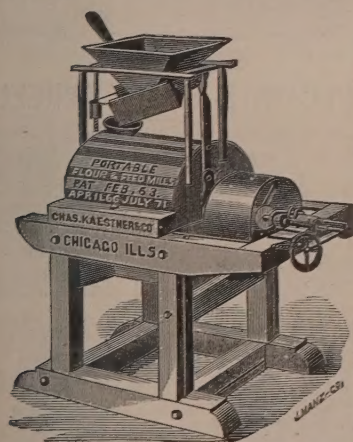
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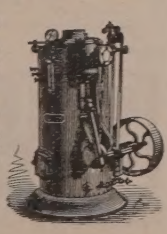
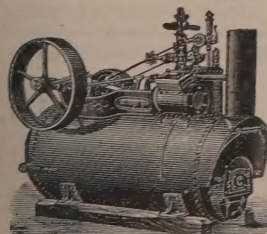
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CHICAGO, May 4, 1883.

WM. H. LOTZ, Mechanical Engineer
Metropolitan Block, Chicago.

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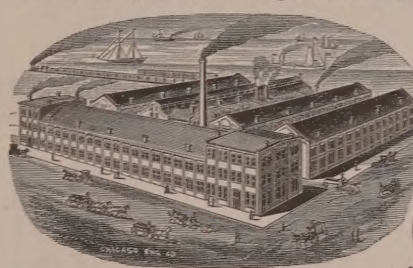
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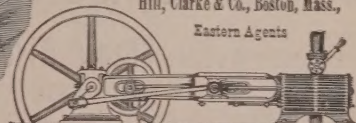
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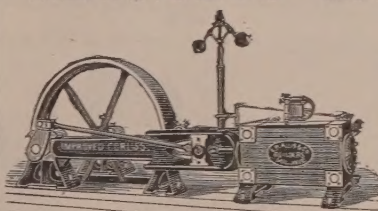


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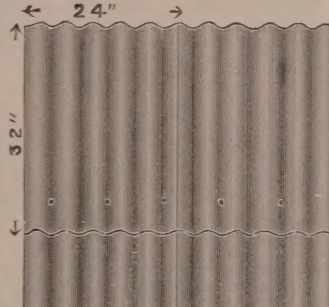
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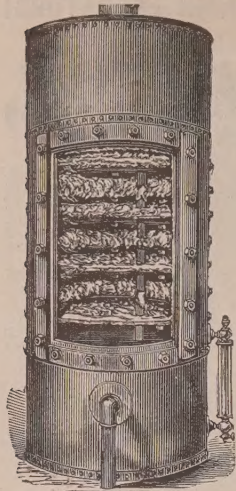
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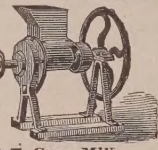
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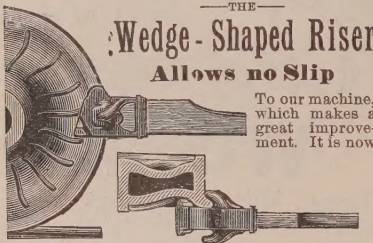


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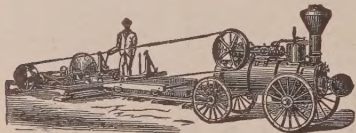
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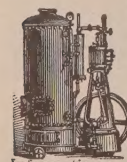
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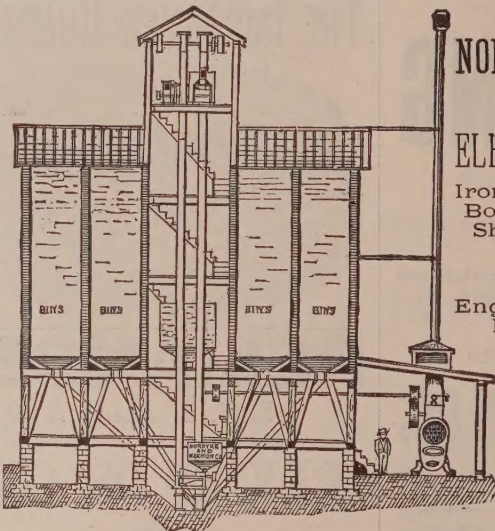
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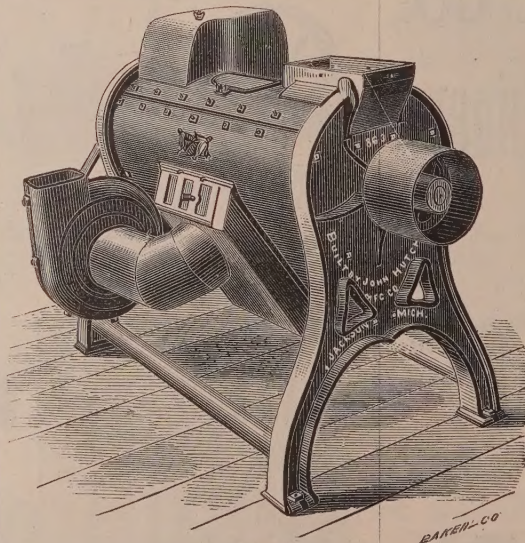
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Shelled Corn per hour.

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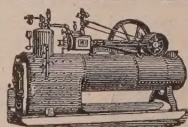
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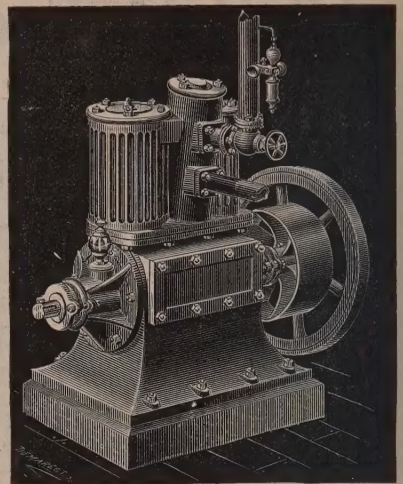
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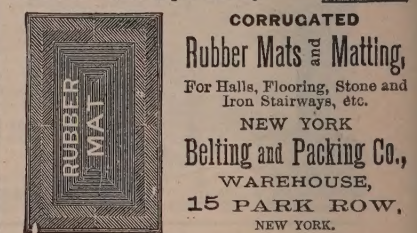
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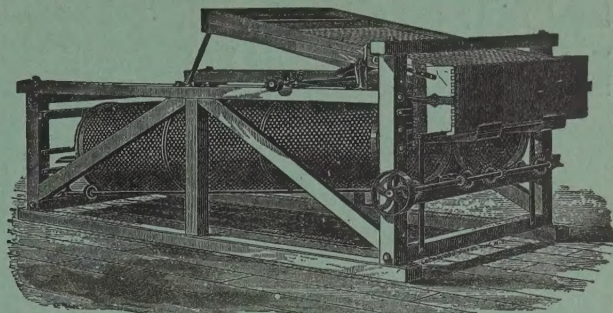
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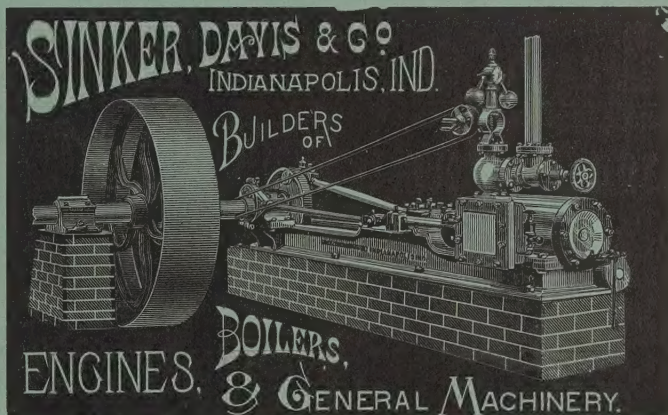
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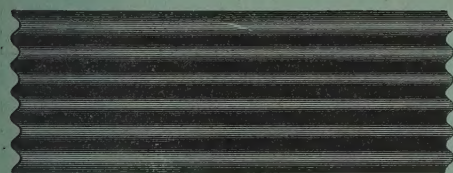
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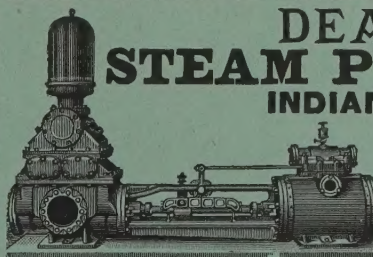
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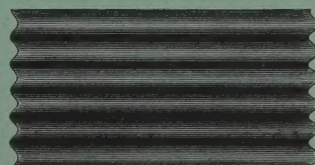
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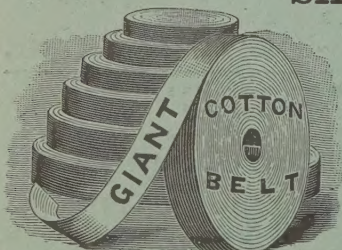
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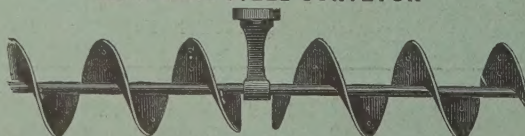
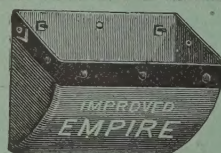
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